MAY 3, 1954

Railroad Management Series Begins . . . p. 34

RAILWAY AGE

The Standard Railroad WEEKLY for Almost a Century

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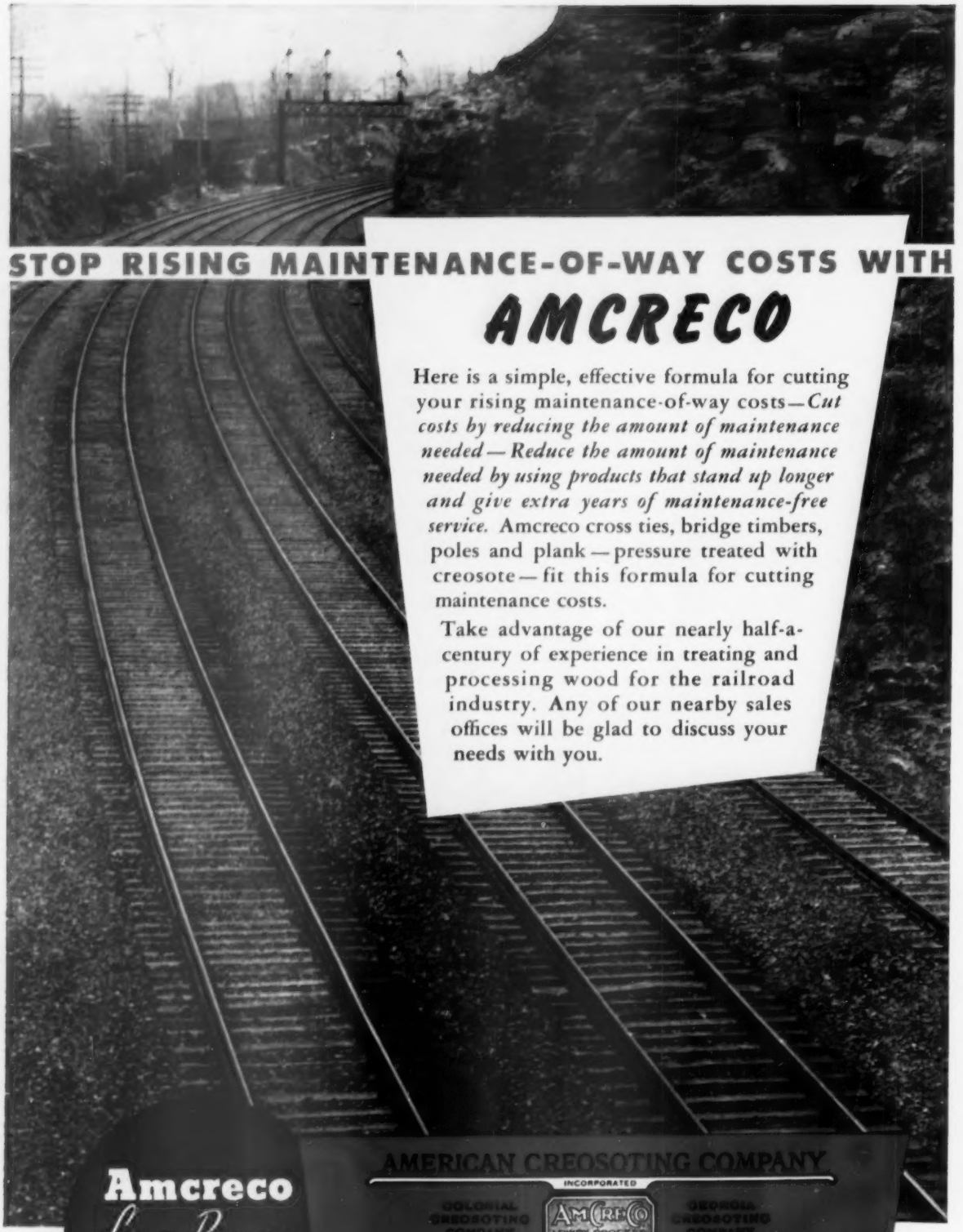

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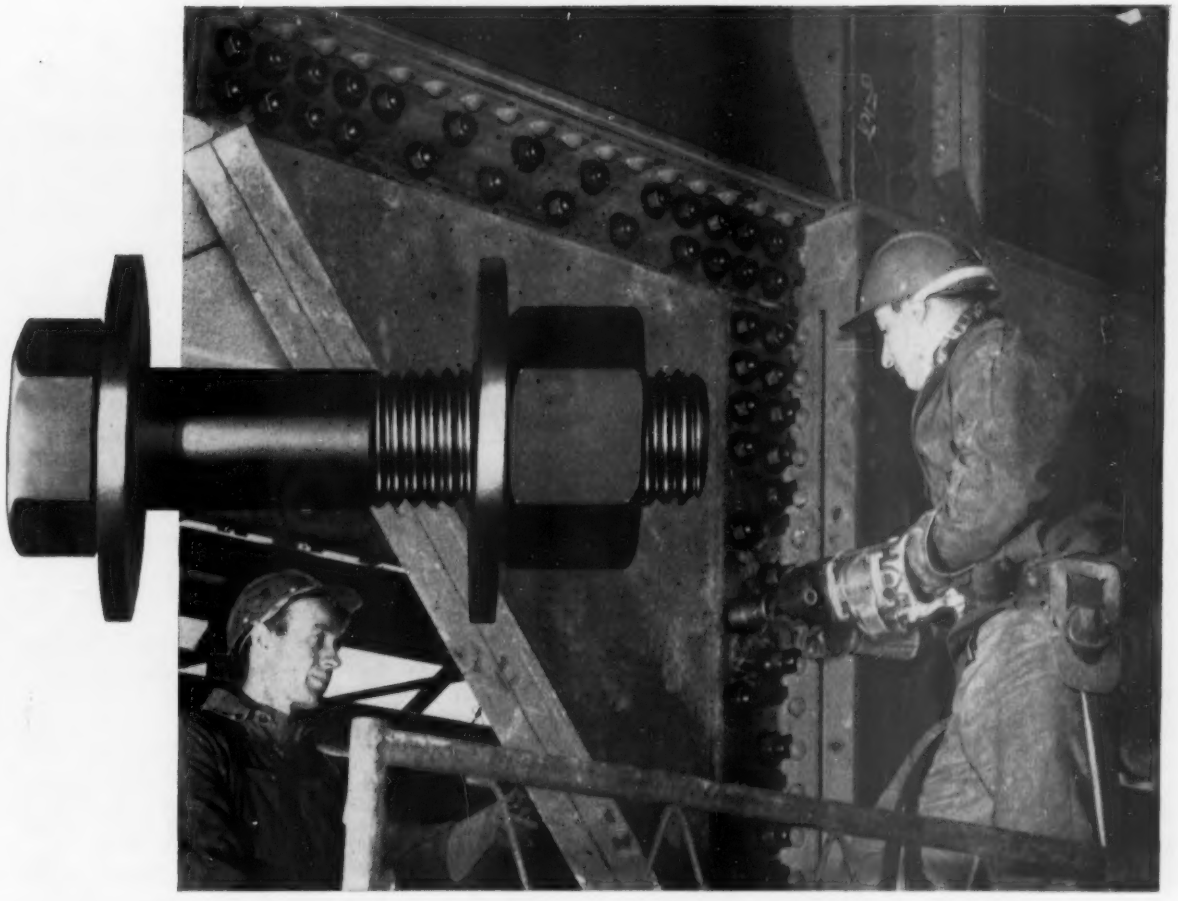

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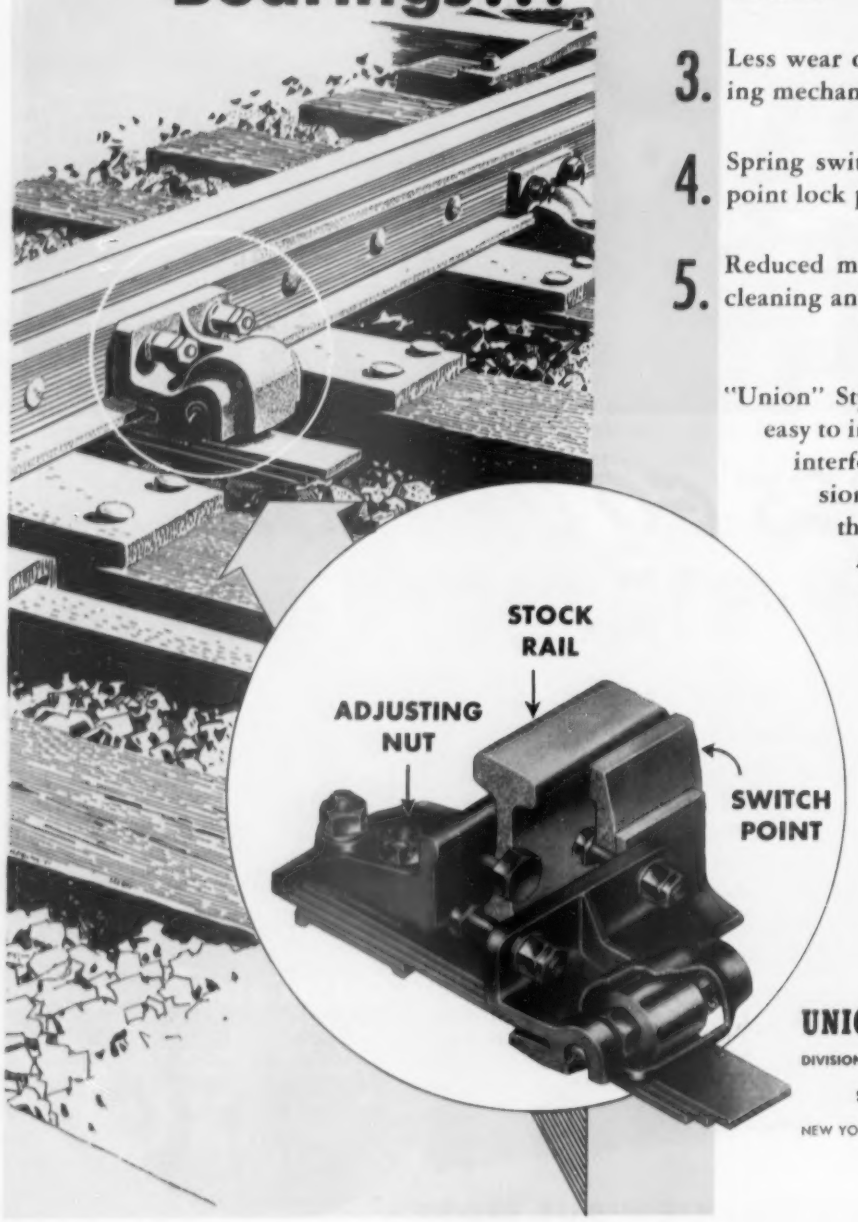

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May 3, 1954 Vol. 136, No. 18

Week at a Glance

Labor developments were prominent in last week's spotlight. Switchmen settled for the "trainmen package," and an arbitration board began hearings on engineers' demands. 7, 8

Family fares, "highly successful" in the east, are being extended, for the summer vacation season, to new territory and to first-class travel. But apparent agreement between eastern and western roads on passenger fares doesn't extend to freight-rate divisions, which eastern carriers are asking the ICC to "investigate." 8

Piggyback possibilities may be clarified when the ICC rules on 12 basic questions on which it will hear oral argument beginning June 28. 9

Railroad inventory management was a major topic of discussion at the annual meeting of the Railway Systems & Procedures Association in Chicago. 15

FORUM: More information is needed on specific costs, if railroad efforts to develop rates designed to win back traffic are going to go as far as they should. 33

People are management! As the first article in a series on goals, methods and outlook of contemporary railroad management, this issue tells how the Frisco places managerial responsibility, and selects and trains men to handle it. 34

The Kerite Company's centennial marks 100 years of progress in manufacture of insulated wire and cable. 38

A laboratory for intensive journal-bearing research and study of journal lubrication problems is now in full operation at American Brake Shoe's Mahwah plant. 40

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EQUIPMENT COST IS FAR SMALLER —
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Current Statistics

Operating revenues, two months	
1954	$ 1,472,160,235
1953	1,675,996,363
Operating expenses, two months	
1954	$ 1,213,739,684
1953	1,282,807,100
Taxes, two months	
1954	$ 141,736,619
1953	199,789,450
Net railway operating income, two months	
1954	$ 76,991,960
1953	157,866,816
Net income, estimated, two months	
1954	$ 40,000,000
1953	114,000,000
Average price railroad stocks	
April 27, 1954	$ 61.69
April 28, 1953	$ 64.06
Carloadings, revenue freight	
Sixteen weeks, 1954	$ 9,659,877
Sixteen weeks, 1953	11,060,071
Average daily freight car surplus	
Week ended April 24, 1954	134,683
Week ended April 25, 1953	46,416
Average daily freight car shortage	
Week ended April 24, 1954	427
Week ended April 25, 1953	1,462
Freight cars delivered	
March 1954	4,823
March 1953	6,679
Freight cars on order	
April 1, 1954	20,966
April 1, 1953	68,553
Freight cars held for repairs	
March 1, 1954	98,077
March 1, 1953	94,165
Average number of railroad employees	
M'd-March 1954	1,058,762
Mid- March 1953	1,188,503

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Departments

Week at a Glance CONTINUED

TV keeps an eye on switching in one of the PRR's Pittsburgh terminal operations. 42

Test train runs 151 mph in experimental run on the French National Railroads. Speed of 124 mph was attained on curved track. 43

The wood tie is holding its own in the campaign to keep railroad "structures safe and costs low." And it will probably do so for a long time to come, the AWPA convention was told. 44

Equipment business is looking up — with inquiries for 50-100 commuter cars and 300-600 express reefers out or expected shortly. 48

BRIEFS

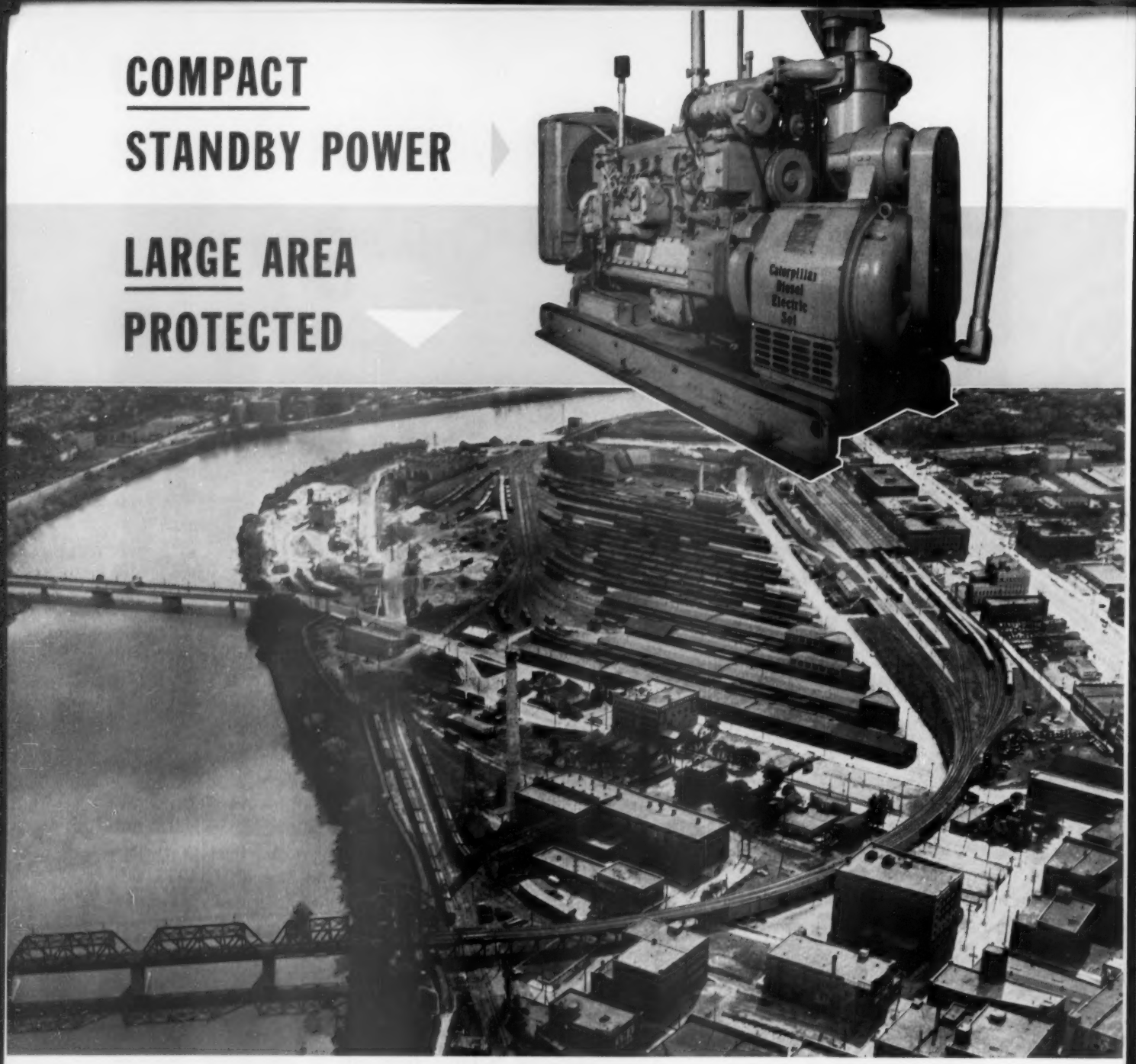
Appreciation for railroad contributions to the Department of Agriculture's emergency drought-relief program has been expressed by Secretary Benson in a letter to the AAR. Freight-rate reductions in effect at various times between July 1, 1953, and March 31, 1954, said Mr. Benson, "made possible the quick and efficient inauguration of the federal relief program" and helped make that program "available over a wider area."

"Genuine railway progress" is the Brotherhood of Railroad Trainmen's comment on the New York Central's decision to build terminals in five major cities for trailer-on-flat-car operation (*Railway Age*, April 19, page 11). By thus meeting "the transportation challenge of our times," says the BRT, the NYC "will benefit the railroad, our customers, shippers, and railroad workers who will loyally assist in making the operation a success." The BRT, incidentally, now has a specially designed news release form publicizing T-O-F-C service.

The Railroad Hour, industry-sponsored radio show on the air since 1948, may be nearing the end of its days. A "tentative" decision has been made to shelve the program when the current winter season ends June 21.

COMPACT STANDBY POWER

LARGE AREA PROTECTED



For emergency electric power in its Winnipeg yards, Canadian National Railways depends on a Caterpillar D318 Electric Set.

The compact standby unit is installed in the railway's steam generating plant in the city yards. It stands ready to supply instant power to coal conveyors, forced and induced draft fans, stoker motors, boiler pumps and emergency lights.

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BofLE Wage Hearings Begin

Six-man arbitration board urged to deny 22½% wage hike demand in favor of "trainmen package" settlement

"No justification exists" for granting engineers "favored and preferred" wage treatment over other operating employees, Howard Neitzert, counsel for the three regional carrier conferences, told the six-man arbitration board hearing the Brotherhood of Locomotive Engineers' demands for a 22½% wage increase at Chicago.

The BLE had originally sought a 30% increase, but in a surprise move at the opening session of the arbitration hearings reduced its demands to 22½%.

In his opening statement to the board on April 26, Mr. Neitzert said engineers are already the highest paid carrier workers. He urged the board to deny the wage request and, in its place, extend the pattern of settlement already agreed to by conductor, trainman, fireman, and switchman organizations—a five cent hourly wage increase effective December 16, 1953, plus a third week's vacation for employees with 15 or more years of service.

Tops Officer Group—Mr. Neitzert said both earnings and rates of pay of engineers stand at "highest levels in railroad history." They have been increased, he said, by greater amounts than earnings of any other class of railway worker. In 1953, he continued, average compensation received by all railroad engineers was $6,754, or $3.08 per hour worked. The average for all other railroad employees—including officers, he added—was $4,320, or $2.08 per hour worked.

If the original demand for a 30% increase were applied, it would boost average annual pay of passenger engineers to $10,152 for only 31 hours work a week. The demands would represent an added cost to the carriers of $96 million a year for engineers alone, or $1½ billion if extended to all carrier employees, Mr. Neitzert asserted.

He cited "present adverse conditions and prospects" which the carriers face, and their consequent "inability to pay," as another reason why the demands should be rejected. "During the last eight months," he went on, "the railroad industry has experienced severe and for some carriers, catastrophic, declines in traffic and revenue. Even the more favorably situated railroads are threatened with the most serious consequences. Revenue carloadings—the only source from which carriers derive any income—are currently 16% below a year ago and this decline has been gathering momentum during the last two months," he told the board.

Increased freight rates are an unlikely means of meeting increased wage costs, he explained. "Recent adjustments have not produced the increased revenue desired and expected, and further increases may result in sufficient diversion of traffic to the railroads' competitors as to actually decrease gross revenues."

PART OF A FLEET of 100 new heavy-duty, dual side-pivot, drop-door, automatic air-dump cars recently purchased by the Southern Pacific. The cars, built by Baldwin-Lima-Hamilton Corporation, represent the largest single order of dump cars by any railroad in recent years. They will handle 30 cu yd of material weighing up to 50 tons. One of the first big projects being handled by the new cars is the filling of Islais Creek trestle in San Francisco, material for the fill being transported from near Watsonville Junction, about 90 miles away. Future plans call for using the cars for filling 1964 ft of the trestle approach at Coos Bay drawbridge in Oregon, and for dumping large rock along fills of the Lucin cut-off across Great Salt Lake.

Operations

Schedule Changes

The Chesapeake & Ohio announced new, faster time schedules for its passenger streamliners, the "Sportsman" and the "George Washington," effective with the start of daylight saving time April 25.

Several western roads have used the time change as an opportunity to tighten running times of "name" streamliners. The "Overland"—Chicago-San Francisco train operated by the North Western, Union Pacific and Southern Pacific—is now on a 1-hour shorter schedule in both directions. The "California Zephyr's" running time on the Western Pacific has been reduced by 30 minutes between Salt Lake City and San Francisco, and the WP's thrice-weekly "Zephyrette" now runs between the same terminals in 30 minutes less time eastbound; 10 minutes less westbound.

The Rock Island-Southern Pacific "Golden State" between Chicago and Los Angeles is on a schedule eastbound 1 hour 50 minutes shorter than heretofore. Westbound, a 1-hour reduction has been effected. The "Imperial"—companion train on the same run—makes its westbound trip in 45 minutes less. The Rock Island also has introduced lightweight sleeping cars in its Chicago-Des Moines service.

The Illinois Central has added a new service between New Orleans and Chicago by extending the "Louisiane"

Briefly . . .

. . . **Award winners in Associated Business Publications'** 1954 contest for advertising in industrial, institutional and professional papers included the Chesapeake & Ohio, Westingthouse Air Brake Company, Link-Belt Company, Timken Roller Bearing Company, Reynolds Metals Company, General Electric Company, Libby-Owens-Ford Glass Company, and United States Steel Corporation.

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northbound from New Orleans, instead of ending its run at Memphis, as heretofore. A wider variety of sleeping car accommodations and a new through car service between Chicago and Jackson, Miss., have been instituted on this train.

PRR to Begin Piggyback To Four Cities June 16

Rail-trailer service for highway truck-trailers between four major metropolitan areas will be inaugurated by the Pennsylvania June 16. Loaded trailers will be carried on flat cars which will be moved in existing fast freight trains serving greater New York, Philadelphia, Pittsburgh and Chicago, and door-to-door freight service for trailer loads will be offered without transfer of merchandise.

The service will be started with 90 flat cars of standard 50-ft design, equipped for trailer service, but, for future development, an order has been placed for 200 new depressed-center flat cars, 75 ft long, designed to carry two trailers to a car. Delivery is expected in August.

The initial experimental service will explore possibilities of T-O-F-C transportation to uncover and solve problems about which there has been so much discussion, according to a statement by Walter S. Franklin, president of the PRR. "This new form of railroad operation promises benefits to the commerce of our nation, and it is time to resolve with practical experience the debate which has gone on in transportation circles during the last two years," Mr. Franklin said. "To a limited extent, such service is already in existence in several sections of the country, but problems involved in offering it on a broad territorial basis have so far postponed its general adoption," he added. "We propose to work out these problems as we go by starting the service on a limited basis and extending it as experience dictates and opportunity develops. With delivery of the 200 new flat cars . . . we will have the most modern and efficient railroad equipment for this service and will be able to develop the economic factors beyond any previous experiments with the transportation of trailers on flat cars."

"Tariffs for the new service will be filed May 17 at regular motor carrier rates," Mr. Franklin said. "For the initial experiment trailers will be owned—or leased—by the Pennsylvania. Second-day delivery for full trailer loads will be furnished in both directions between the greater New York area and Pittsburgh and Chicago. Initial tariffs will be limited to local points on the Pennsylvania. Consideration of tariffs for establishing joint arrangements with other lines will be postponed until after experience with the initial service provides a better perspective for estimating results of an extension."

SWITCHMEN SETTLE FOR "TRAINMEN" PACKAGE

The Switchmen's Union of North America has settled its wage dispute with 12 western railroads and terminal companies. Basis for the settlement was the so-called "trainmen" package previously accepted by the Brotherhood of Railroad Trainmen, the Order of Railway Conductors and the Brotherhood of Locomotive Firemen & Enginemen—five cents an hour increase plus 13 cents an hour previously gained under cost-of-living adjustments.

In addition, paid annual vacations for yard foremen, brakemen and switchtenders with 15 or more years of service have been extended to three weeks. The settlement also calls for termination of the cost-of-living escalator provision.

The union had sought a 40-cent hourly increase plus "correction" of "inequities" resulting from the five-day work week; continuation of quarterly cost-of-living adjustments; a 10-cent second-trick and 15-cent third-trick differential; double pay for overtime and work on specified holidays; a paid vacation plan progressing up to four weeks for employees with 15 or more years of service; seven days sick leave annually and cumulative to a maximum of 60 days; and full medical, surgical and hospital care payment by the carriers.

George S. MacSwan, of the National Mediation Board, has been active in the case since the union requested mediation early in April.

Western carriers affected by the new agreement include the Rock Island; Chicago Great Western; Denver & Rio Grande Western; Great Northern; Minneapolis & St. Louis; Southern Pacific, and Western Pacific. Also involved are the Davenport, Rock Island & North Western; Kansas City Terminal; Northern Pacific Terminal of Oregon, and Saint Paul Union Depot. The Lackawanna, along with a number of eastern switching and terminal companies, had signed stand-by agreements pending outcome of negotiations with western roads.

Figures of the Week

Freight Car Loadings

Loadings of revenue freight in the week ended April 24 totaled 626,181 cars, the Association of American Railroads announced on April 29. This was an increase of 13,297 cars, or 2.2 per cent, compared with the previous week; a decrease of 153,623 cars, or 19.7 per cent, compared with the corresponding week last year; and a decrease of 153,308 cars, or 19.7 per cent, compared with the equivalent 1952 week.

Loadings of revenue freight for the week ended April 17 totaled 612,884 cars; the summary for that week, compiled by the Car Service Division, AAR, follow:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, April 17

District	1954	1953	1952
Eastern	108,223	129,896	124,086
Allegheny	114,336	154,807	149,424
Pocahontas	45,423	54,072	55,924
Southern	118,123	131,689	133,339
Northwestern	72,040	107,648	103,611
Central Western	102,405	113,168	110,635
Southwestern	52,334	60,348	58,050
Total Western Districts	226,779	281,164	272,296
Total All Roads	612,884	751,628	735,069
Commodities:			
Grain and grain products	40,564	42,732	40,208
Livestock	7,315	8,506	8,841
Coal	96,348	118,880	128,745
Coke	7,612	13,718	13,794
Forest products	38,746	44,265	44,084
Ore	17,837	65,553	61,589
Merchandise l.c.l.	62,388	69,659	71,756
Miscellaneous	342,074	388,315	366,052
April 17	612,884	751,628	735,069
April 10	606,790	721,139	690,752
April 3	599,302	704,517	706,889
March 27	601,426	715,333	725,487
March 20	609,959	701,065	720,009
Cumulative total, 16 weeks	9,659,877	11,060,071	11,473,102

In Canada.—Carloadings for the seven-day period ended April 7 totaled 66,003 cars, compared with 99,832 cars for the previous 10-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
April 7, 1954	66,003	28,804
April 7 1953	62,795	31,013
Cumulative Totals		
April 7, 1954	903,340	394,412
April 7, 1953	979,214	438,042

Rates & Fares

East-West Divisions Dispute Opens

Another railroad dispute over divisions came to the surface last week when eastern carriers openly charged that present East-West divisions are "unjust, unreasonable, inequitable and unduly prejudicial."

The eastern roads asked the Interstate Commerce Commission to investi-

gate the situation. They charged the present basis for dividing joint rates was established "many years ago" under conditions greatly different from those which prevail today.

Eastern carriers said their operating costs are higher, and financial needs greater, than those of western roads; also that present divisions are not, and have not been, satisfactory, because they do not yield "fair, just and equitable revenues."

Attempts to reach agreement with western roads have failed, eastern roads told the ICC. They asked the commission, after investigation, to set "just and equitable" divisions, retroactive to April 5, the date the complaint was filed.

The ICC docketed the eastern petition as No. 31503, and scheduled a prehearing conference for June 15. Examiner Howard Hosmer will preside. Western roads were given 20 days to file a reply.

In a similar proceeding decided by the commission early in 1953, eastern roads won a divisions fight with Southern and Southwestern Carriers. Effect of this decision was to shift approximately $36,000,000 in annual revenue to eastern carriers.

Law & Regulation

Piggyback Case Set for Argument

ICC will hear interested parties June 28 on 12 "basic and fundamental" questions relating to trailer-on-flat-car service

The Interstate Commerce Commission will hear oral argument June 28 on 12 questions relating to trailer-on-flat-car operations.

This was announced in a commission notice in the piggybacking case, No. 31375. The objective, the notice said, is issuance, under section 5 (d) of the Administrative Procedure Act, of a declaratory order on 12 "basic and fundamental" questions developed by the commission from questions posed by the New Haven and others.

NH Petition Started Case—The New Haven posed 20 questions in a petition filed with the commission last October. The Commission instituted the present proceeding last January (*Railway Age*, October 12, 1953, page 34, and January 18, 1954, page 8).

After setting up the present notice's 12 questions, the commission went on to say that "other suggestions, questions and problems relating to this subject will be disposed of at a future date upon presentation of proper pleading."

The 12 questions are:

1. May a railroad transport its own freight (i.e., freight tendered it by shippers for movement by railroad, on railroad bills of lading, and at railroad rates) in its own trailers on flat cars, without holding any authority under part II of the Interstate Commerce Act? Otherwise stated, do such operations constitute carriage by railroad subject to part I or carriage by motor vehicle subject to part II?

2. If a railroad transports its own freight in trailers on flat cars, is the motor operation of the trailers in collection and delivery service at the termini of the rail movement an operation within the partial exemption of section 202 (c) (1) of the act?

3. May a railroad, under provisions of tariffs duly published and filed by it, but without holding any authority under part II, transport freight-laden trailers on flat cars, the trailers having a prior and/or subsequent highway movement:

   (a) by private carrier by motor vehicle;
   (b) by contract carrier by motor vehicle.

4. Under the conditions stated in question 3, may a railroad transport such trailers if the prior and/or subsequent highway movement is by common carrier by motor vehicle? If so, to what extent must the railroad ascertain and be subject to the limitations in the motor common carrier's certificate as to (a) territory and (b) commodities?

5. May a railroad engaged in trailer-on-flat-car service and a motor common carrier establish through routes and joint rates covering movement of the motor common carrier's trailers on the railroad's flat cars?

6. May a railroad engaged in performing trailer-on-flat-car service under joint-rate arrangements with some motor common carriers refuse to establish such arrangements with other motor common carriers equally eligible under the law to participate in such arrangements?

7. As between a railroad and a motor common carrier whose loaded and empty trailers are moving in the railroad's trailer-on-flat-car service, is the relation that of connecting carriers (a) where the arrangement is for substituted-rail-for-motor service; (b) where the arrangement is for other than substituted-rail-for-motor service?

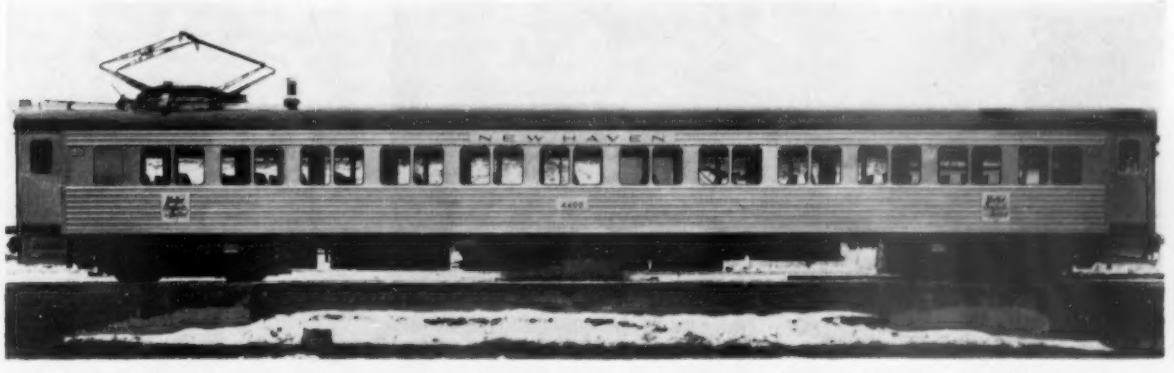
8. May a railroad, under provisions of tariffs duly published and filed by it, but without any authority under part II, transport freight-laden trailers on flat cars, the trailers having a prior and/or subsequent highway movement in freight forwarder service?

9. May a railroad engaged in trailer-on-flat-car service and a freight forwarder establish through routes and joint rates covering movement of the freight forwarder's trailers on the railroad's flat cars?

10. May a railroad engaged in performing trailer-on-flat-car service under joint-rate arrangements with motor common carriers refuse to publish and file appropriate tariffs and to transport the freight-laden trailers of (a) contract carriers by motor vehicle; (b) private carriers by motor vehicle; (c) freight forwarders?

11. May a railroad, by provisions in its tariff, make its trailer-on-flat-car service available to private carriers but not to freight forwarders?

12. If a freight forwarder has a contract with a motor common carrier and if a



ONE HUNDRED of these stainless-steel, air-conditioned, 120-passenger multiple-unit cars are being put in service, as delivered, in the New Haven's commuter operations in the New York area. Built by the Pullman-Standard Car Manufacturing Company at Worcester, Mass., the cars cost $173,000 each, and feature fluorescent lights, thermostatic heat control, and ignitron rectifiers. Technical features were described in the March 15 *Railway Age*.

trailer tendered to a railroad carries the identification of the motor common carrier, must the railroad providing trailer-on-flat-car service accept as compensation its division from the motor common carrier under the motor-rail joint rate rather than accept charges based on railroad rates?

Interested parties desiring to participate in the oral argument must request an allotment of time at least 10 days before the argument's date. Such requests should be directed to ICC Secretary George Laird.

Advantages Will Come with Equity

Bricker sees transport picture distorted by confiscatory taxes, discriminatory promotional activities, biased regulation

Chairman Bricker of the Senate Committee on Interstate and Foreign Commerce said last week that only when conditions are equitable will inherent advantages of various modes of transportation be determined by their customers' preferences and reflected in their competitive positions.

The Republican senator from Ohio spoke April 27 in Washington, D.C., at a transportation luncheon session of the annual meeting of the Chamber of Commerce of the United States. Presiding at the session was President Arthur E. Stoddard of the Union Pacific, who is chairman of the chamber's Transportation and Communication Committee.

Plight of Railroads—"The present financial plight of the railroads is one result" of "oppressive and discriminatory regulation of surface transportation," Senator Bricker said. He also had this to say:

"The poor financial condition of any transportation group is the concern of the federal government only when such financial weakness results from government action. If regulation were fair and impartial, if taxes were not so high as to discourage private investment, and if the government's promotional activities did not give certain carriers an unfair competitive advantage, we would not be concerned with distortions in the transportation picture . . . . Such is not the case today."

Road Blocks — Meanwhile the senator had listed "transport road blocks" which should be cleared away. First on the list was "the inability of the railroads to abandon highly unprofitable services in intrastate commerce."

Mr. Bricker called this a "particularly senseless road block," and went on to note that his committee has reported favorably to the Senate a bill (S.281) to give the Interstate Commerce Commission authority to do the clearing.

Next on the senator's list was "the great time-lag between increases in carrier costs and compensating rate adjustments." Here again, he noted, his committee has reported the so-called time-lag bill (S.1461) to remedy the situation.

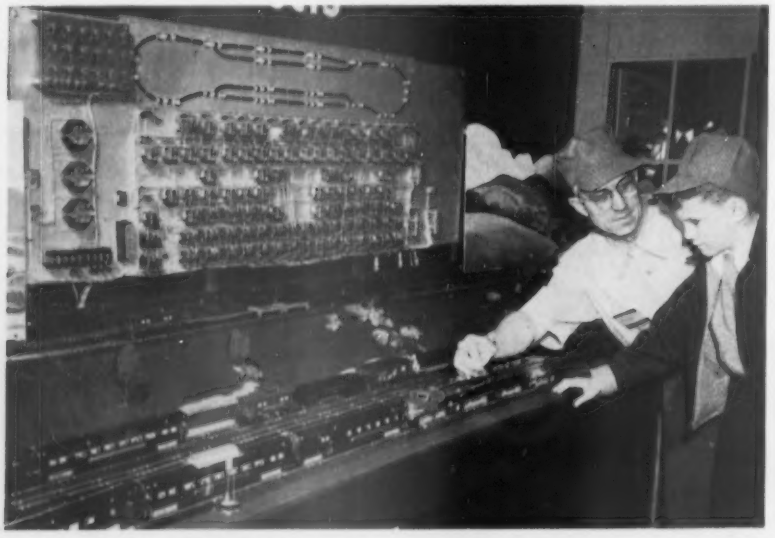
ICC Appropriations — Senator Bricker also referred to the ICC's difficulties in obtaining what it considers adequate appropriations to perform its regulatory duties. While giving the commission credit for "trying valiantly," he also expressed his view that surface carriers are "over-regulated."

Later on the senator said his committee has learned from its transport studies that "the ills of each segment of the industry varied with the degree of federal regulation under which each operated." He added: "It is perhaps a bitter commentary that the protecting arm of federal regulation is bent in a stranglehold on many of the great carriers of the nation."

Bill Would Trim ICC's Intrastate Rate Power

Representative Gamble, R., N. Y., has introduced in the house a bill to trim the Interstate Commerce Commission's power over intrastate rates.

The bill, H.R. 8903, would add to the Interstate Commerce Act's Section 13 a proviso stipulating that the ICC shall have no jurisdiction to alter any intrastate rate "unless it appears that its legality has been duly presented to state regulatory authorities, and that such authorities have had a reasonable opportunity to act thereon and have failed to grant the relief requested".



TRANSISTOR'S "BABY BROTHER," the germanium diode, was utilized by the General Electric Company in this completely automatic electric model train exhibit at the national convention of the Institute of Radio Engineers. A combination of some 1,400 ft of wire, 96 relays and about 200 germanium diodes and power rectifiers teamed up to provide an automatic control system under which three trains travelled around the same track layout in opposite directions and at varying speeds without colliding.

Supply Trade

Alco No Longer a "Specialty" Firm

The American Locomotive Company is leaving behind it the long years when it was a specialty company manufacturing only locomotives and is "well launched into the business of providing multiple products and services for a variety of expanding industries," Perry T. Egbert, president and new chief executive officer, told stockholders at the annual meeting in New York City. The meeting was opened by Duncan W. Fraser, who is retiring as chairman of the board. Alco by-laws have been amended to make the president the chief executive officer.

Mr. Egbert said sales of the firm's newer regular products expanded in 1953 to about $85,000,000, approximately the volume of locomotive shipments. In response to a shareholder's question, Mr. Egbert disclosed that Alco management is considering a change in the corporate name that

would more accurately reflect the company's broadening product base.

Harmon S. Eberhard, executive vice-president of **Caterpillar Tractor Company,** at Peoria, Ill., has been elected president, to succeed **Louis B. Neumiller,** who becomes chairman of the board, replacing **Harry H. Fair,** resigned. **G. E. Burks,** director of engineering, has been appointed director of engineering and research, at Peoria.

A. A. Helwig, vice-chairman, has been elected chairman of the board of **Standard Railway Equipment Manufacturing Company,** succeeding **Arthur A. Frank,** retired.

OBITUARY

Earl L. Tyner, 58, sales engineer of Ex-Cell-O Corporation's railroad division, died in Detroit April 19.

Rogers Case, Sr., president of Transandean Associates, Inc., of Transandean Canada, Ltd., and of Compania Constructura Transandina, Ltd., a telephone and telegraph construction company in Colombia, S.A., died at his home in Orange, N.J., April 28. For many years Mr. Case represented the Automatic Electric Sales Corporation in England and Colombia.

Financial

Central Sues to Block Transfer of C&O Stock

Harold S. Vanderbilt, a New York Central director and owner of 60,000 shares of its stock, and the Central itself, have started court proceedings to prevent "by-passing" of the Interstate Commerce Commission by the Alleghany-Young-Kirby group seeking to obtain control of NYC. In the same proceeding, in the Supreme Court of New York county, Mr. Vanderbilt and the Central seek to restrain the Chase National Bank of New York from giving proxies to Clint W. Murchison and Sid W. Richardson for 800,000 shares of Central stock.

These 800,000 shares had been acquired by the Chesapeake & Ohio and deposited with Chase as trustee under an ICC order dated June 5, 1945. Messrs. Murchison and Richardson purchased the Central stock from C&O February 23, 1954.

In addition to Chase, the proceeding names Alleghany Corporation, Robert R. Young, Allan P. Kirby, Mr. Murchison, Mr. Richardson, C&O and Cyrus S. Eaton, C&O chairman, as defendants. A temporary restraining order to prevent Chase from giving proxies to Messrs. Murchison and Richardson will be sought.

The complaint alleges that NYC and its shareholders would be damaged by the carrying out of a program by the defendants, other than Chase, to bypass the ICC by establishing control over Central and managing it in common with the C&O without prior approval of the Interstate Commerce Commission.

The defendants, says the complaint, "threaten to and will eliminate competition between the C&O and NYC to the benefit of the C&O. Traffic which would use NYC would be diverted to the C&O."

Suit on New Haven, too—Meantime, the proxy fight on the New Haven, which had resulted in election of Patrick B. McGinnis as president, to succeed Frederic C. Dumaine, Jr. (*Railway Age*, April 26) was revived by a suit filed at New Haven, Conn., in which the Dumaine forces are contending that the McGinnis victory was obtained "by voting proxies of doubtful validity."

DECATUR HONORS WABASH

It is fairly common for a community to mark, in some way, the centennial of its first railroad train. But it is something else when a community creates a week-long celebration to signify its appreciation for a century of railroad service.

That, however, is what Decatur, Ill., is doing in honor of the Wabash. It is observing its own "Wabash Centennial," beginning May 9, to mark completion of 100 years of service to the community by the Wabash and its predecessor Great Western.

The idea of a civic expression of "Thanks!" originated with the Decatur Association of Commerce and has been worked out by a committee headed by S. J. Bradfield, a Decatur banker. Plans encompass the entire city of nearly 70,000.

Teachers—more than 500 of them—have received kits for units of study on rail transportation. All pupils from third through sixth grade have been furnished copies of the AAR's narrative booklet, "Rails Across America." All schools have been furnished with prints of the Wabash's new color motion picture, "Once Upon the Wabash"—created specially for the centennial observance. And Wabash employees have made more than 50 talks at school assemblies and classes.

The May 9 issue of the Decatur Herald & Review will carry a special section devoted to a history of the Wabash and the ways it has served the city. Students of the school of music of Millikin University will present a pageant on May 14 depicting the history of both the railroad and the city. Open house at the Wabash shops will follow on May 15, with special train service bringing visitors to special displays of rolling stock, shop equipment, repair procedures, etc.

The main event of the week-long observance will be a "community dinner" on May 12, at which Wabash President Arthur K. Atkinson will receive a bronze plaque from Harold Pogue, president of the association of commerce. A. E. Staley, president of the A. E. Staley Manufacturing Company and a Wabash director, will preside as toastmaster, and the guest speaker will be James C. Worthy, assistant secretary of commerce for administration.

Organizations

C. J. Code, assistant chief engineer—engineer tests, of the Pennsylvania, will deliver an illustrated talk on "Rail Web Failures" at the May 6 dinner meeting of the **Metropolitan Maintenance of Way Club,** to be held at the Railroad & Machinery Club, 30 Church Street, New York, at 6:30 p.m. The meeting also will be the maintenance club's annual, with election of officers, and announcement of plans for a June 3 outing at Wayne Country Club, Preakness, N.J.

The **Wyoming Valley Traffic Club** will hold its 23rd annual dinner, golf tournament and installation of officers at Irem Temple Country Club, Dallas, Pa., May 6.

H. S. Bergman, superintendent shops, Baltimore & Ohio, will speak at a meeting of the **St. Louis Railroad Diesel Club** at the Hotel York, at 8 p.m., May 11. His subject will be "Increased Use of Welding, Metallizing and Chrome Plating for Reconditioning of Diesel Parts."

(Continued on page 14)

Rubber tires speed ditching and road-bed widening

Tournapulls whip restricted quarters, complete 1-mile cycle every 8 minutes on drainage job for CB&Q RR

When the Chicago Burlington & Quincy decided to improve drainage along a 5½-mile section of main-line track near Golden in western Illinois, they contracted all dirt-moving to K & K Excavators, Skokie, Ill. Construction involved widening the shoulder to 13′ from track center, breaking off a 3-to-1 slope to a 7 ft. flat-bottom ditch, and backsloping at 2-to-1. To handle 85% of the job, K & K brought in 1 C and 2 D Tournapulls.

Eliminates cut-outs and turn-arounds

Time studies, taken with Tournapulls loading in narrow ditch cut, show the "D's" got 5 pay yds. of clay, black sandy loam and topsoil in 40 seconds . . . the "C", 10 pay yds. in 60 seconds. Mile-long cycles took as little as 8 minutes. With their ability to turn around non-stop in a space only 12′ 8″ wide, Tournapulls eliminated the need for building cut-outs or turn-arounds. They maneuvered easily in the narrow cuts between rails and banks.

"I think the Tournapulls are very good machines," says Field Superintendent Ray Scherf. "I like them for *any* kind of dirt work."

Adds Operator Woody Kemp, "Electric-control Tournapulls are fast and will move a lot of dirt. They're easy to handle in narrow places."

Through traffic stays on schedule as "D" loads dirt along the right-of-way. Big low-pressure tires cross tracks without damage to ties, rails or tires. No planking is needed.

Raise roadbeds without removing rails

The same D Tournapulls worked at Bensenville, Ill., where they put in a 40,000-yd. hump for the Milwaukee Road. K & K also used them to build new rail bed for the same line at Terre Haute, Ind. Here, the 2 units self-loaded, hauled, 9,700 cu. yds. in 60 hours. On a third job — this one for the Illinois Central — the versatile units hauled on the rails, spreading sand and cinders to rail height. The IC then raised rails and ties without taking them out.

For lower-cost contract grading it will pay you in both time and money to call in contractors with off-track LeTourneau-Westinghouse machines. Tournapulls also can help you on your own maintenance and construction dirt-moving. Let us arrange a demonstration on your line so you can check their advantages for yourself.

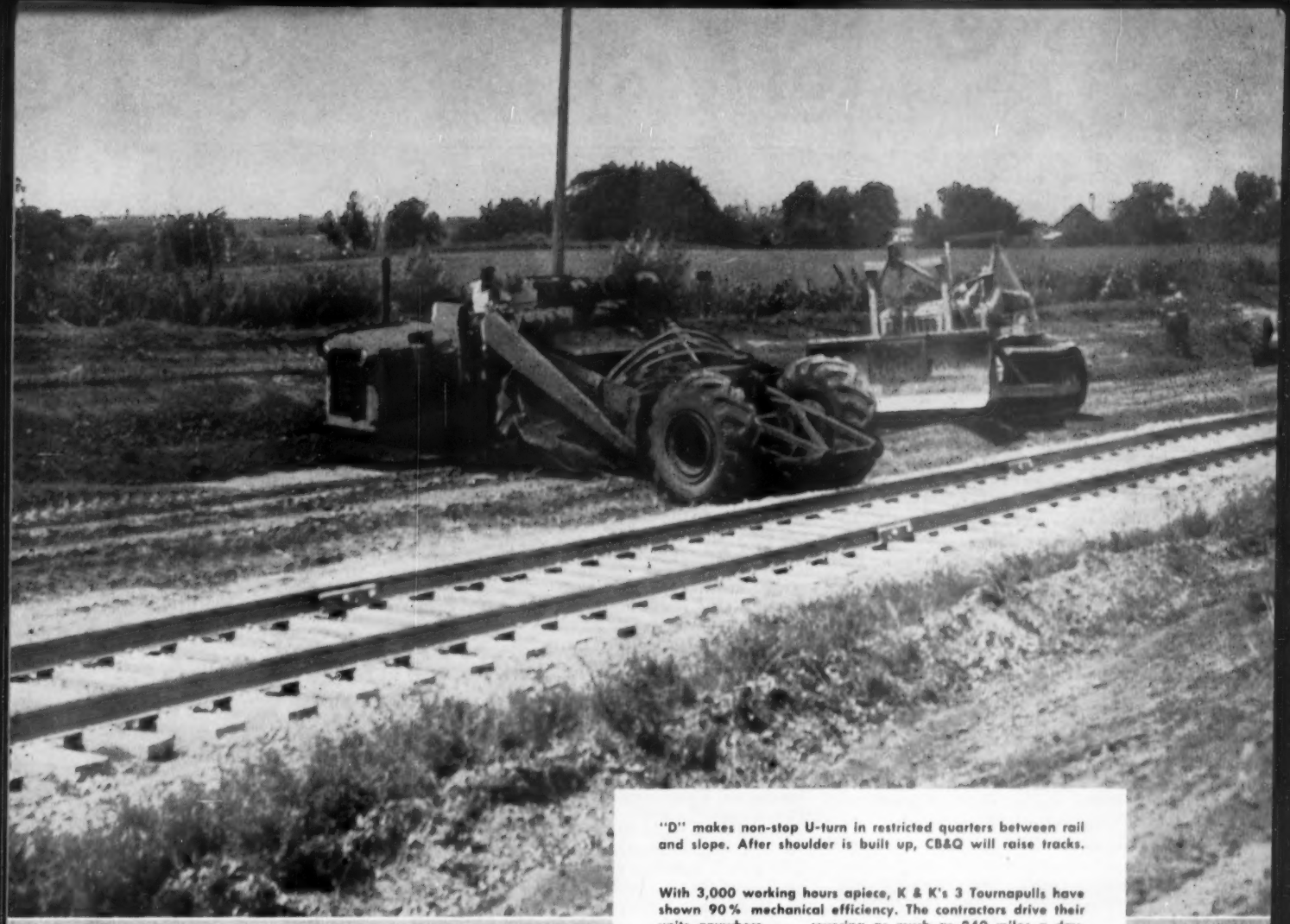
Recently, Westinghouse Air Brake Company purchased from R. G. LeTourneau, Inc. their earthmoving and related products together with their Peoria, Toccoa, and Australian factories. Adding the high quality standards, precision manufacturing experience, and research facilities of Westinghouse Air Brake to the earthmoving developments of LeTourneau, gives you assurance that the improved line of equipment offered by this strong new company is the finest on the market. Be sure to check LeTourneau-Westinghouse before you buy.

Tournapull—Trademark Reg. U.S. Pat. Off. PDP-519-RR

LeTourneau-Westinghouse Company

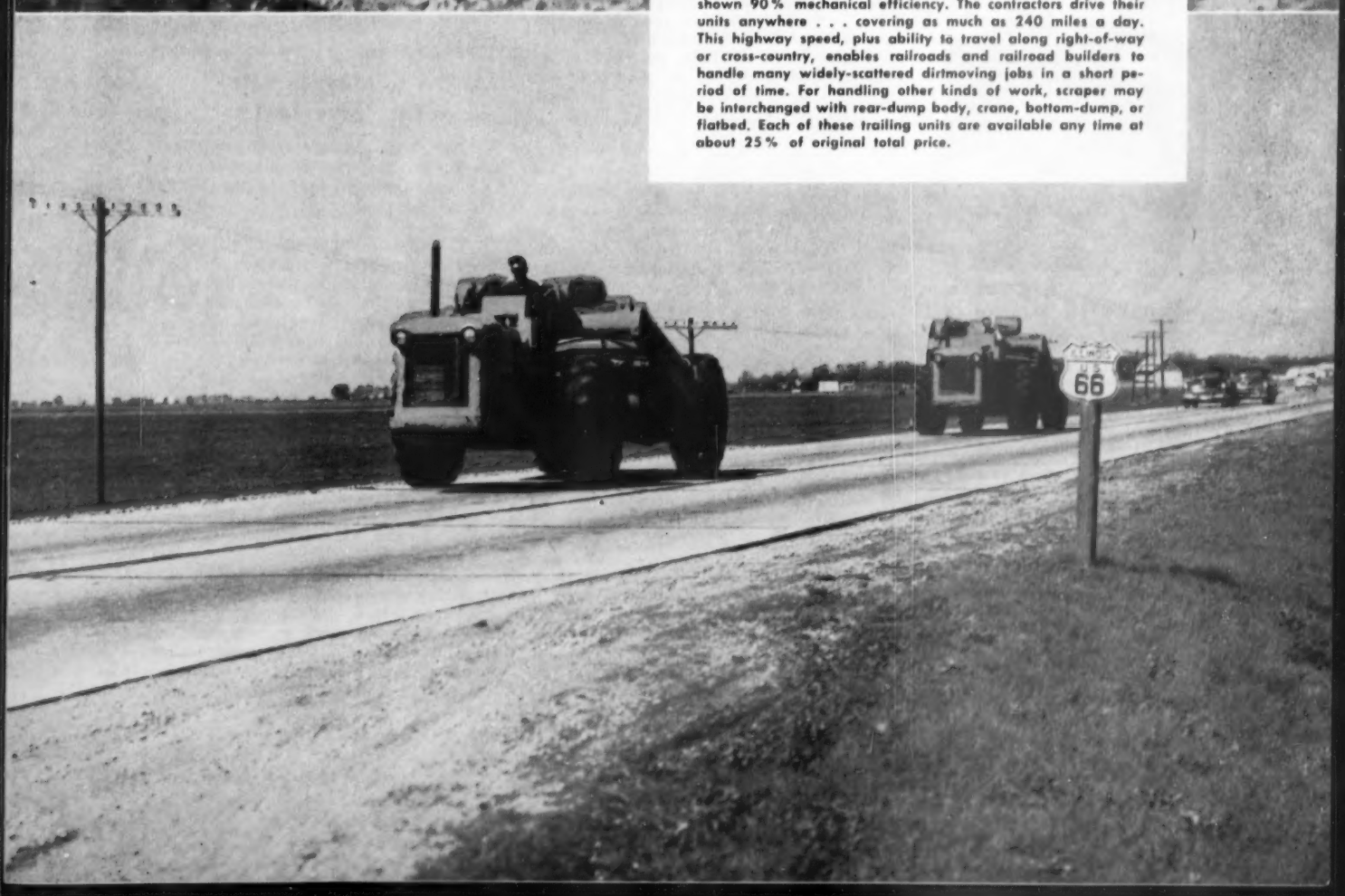
PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company



"D" makes non-stop U-turn in restricted quarters between rail and slope. After shoulder is built up, CB&Q will raise tracks.

With 3,000 working hours apiece, K & K's 3 Tournapulls have shown 90% mechanical efficiency. The contractors drive their units anywhere . . . covering as much as 240 miles a day. This highway speed, plus ability to travel along right-of-way or cross-country, enables railroads and railroad builders to handle many widely-scattered dirtmoving jobs in a short period of time. For handling other kinds of work, scraper may be interchanged with rear-dump body, crane, bottom-dump, or flatbed. Each of these trailing units are available any time at about 25% of original total price.



Organizations

(Continued from page 11)

The **Car Department Association of St. Louis** will hold its annual Railway Supplymen's Night May 25 at the Hotel DeSoto.

H. M. Nelson, general mechanical superintendent, Fruit Growers Express Company, will speak on "Mechanical Refrigeration" at a meeting of the **Eastern Car Foreman's Association,** to be held at 7:45 p.m., May 14, in the Engineering Societies building, New York.

The 16th meeting of the **International Railway Congress** will be held in London, England, May 19-26, inclusive, with an anticipated attendance of over 450 delegates from more than 30 countries. Subjects to be discussed include maintenance of way; modernization of stations; methods of financing modernization; methods of improving steam locomotive efficiency; radiotelephone communications; recruiting of employees; railway participation in highway transportation; protection of electric equipment; and characteristics of electric traction systems.

BOSTON & MAINE ADVERTISING for 1954 features the theme "Building a Stronger Railroad for YOU." The advertisement reproduced here is one a series of 10, one of which is appearing each month in the road's on-line newspapers. Each ad also is being displayed as a poster in B&M stations and employment centers; and, in smaller size, used as a blotter for insertion in outgoing mail.

B&O ENGINEERS FORM "STEAM RUNNERS' SOCIETY"

"The Society for the Preservation of Steam Locomotives and the Men Who Ran Them" was formed a few months ago by a group of Baltimore & Ohio locomotive engineers at Newark, Ohio. As told in the March issue of the B&O Magazine, with diesels "coming on with a rush," the men feel that in a few years steam locomotives will be relegated to the past, and that those who have spent much of their lives on steamers should have some memento to preserve the record of their service. "The Steam Runners' Society," as it is called for short, thus came into being, and a certificate of membership was designed.

Certificates, which at first were issued locally, with no thought of outside distribution, were proudly displayed by the recipients at the recent Brotherhood of Locomotive Engineers convention at Cleveland. As a result, requests for membership have come in from all parts of the United States, Canada, Alaska, Mexico, the Canal Zone, and countries overseas. At the time of printing the March issue of the B&O Magazine, over 10,000 requests had been received for membership in the society.

Many railroad officers cherish the certificates as mementoes of their earlier days at the throttle. Any engineer with steam locomotive experience may apply for membership by writing to L. E. Schwartz, 100 Oakwood avenue, Newark, Ohio, or J. R. Gatten, 249 Lawrence street, Newark. Membership entails no dues or obligations. A charge of $1 is made to cover printing and mailing costs for each certificate.

Two forums—one on improvement of administrative procedure and one on how regulation of commerce can be improved—will highlight the 25th annual meeting of the **Association of Interstate Commerce Commission Practitioners,** which is to be held at Boston's Sheraton-Plaza Hotel May 19-20. The procedural panel, May 19, will include Interstate Commerce Commissioners Charles D. Mahaffie, Hugh W. Cross and Anthony F. Arpaia; Nuel D. Belnap, of the Chicago law firm of Walter, Burchmore & Belnap, and Louis A. Jaffe, professor of administrative law at Harvard Law School. John R. Turney, of the Washington, D.C., law firm of Turney & Turney, will serve as moderator. The regulatory panel, May 20, will have as its moderator George P. Baker, professor of transportation at Harvard Business School, and as its members J. L. Burke, president, Service Pipe Line Company; Henry McCarthy, vice-president, Seatrain Lines; William H. Ott, Jr., general traffic manager, Kraft Foods; John B. Prizer, general counsel, Pennsylvania; and Roland Rice, of the Washington law firm of Rice, Carpenter & Carraway. Another ICC member, Commissioner Howard Freas, will speak on "The Regulatory Process" at a May 19 luncheon. Special committee reports at the afternoon business session on that same day will cover fees for ICC services, revision of ICC rules of practice, and reorganization of the ICC.

T. J. Sinclair, manager, School and College Service Section, Public Relations Department, Association of American Railroads, will speak at a luncheon of the **Business and Transportation Divisions** of the **Special Libraries Association,** at the Netherland Plaza Hotel, Cincinnati, May 19. The luncheon will be preceded by a tour of the Cincinnati Union Terminal. Other sessions of the Transportation Division include a methods meeting on May 17, a breakfast meeting on May 18, and a boat trip on the Ohio river on May 20.

O. Daniel Dreyer, general agent, Western Maryland, has been elected president of the **Rail Traffic Association** of Cincinnati, and William E. Delaney, general agent, Rock Island, vice-president.

ARDA to Meet in Salt Lake City May 16-19

The 45th annual meeting of the American Railway Development Association will be held in the Hotel Utah, Salt Lake City, May 16-19, inclusive.

Theme of the meetings of the Agricultural and Forestry Section will be "The Place of Agricultural Relations in Railway Progress," reclamation, and forestry relations. Reports will be presented to the Industrial Section's meeting on cooperation between the Society of Industrial Realtors and the ARDA; returns from a questionnaire about spur tracks; and site requirements for handling liquefied petroleum gases and anhydrous ammonia.

The Real Estate Section will hear reports on aspects of various real estate operations conducted by railroads. This section also will meet jointly with the Industrial Section. Among subjects to be reported on at the joint meeting are protective zoning; acquisition of land and development of new industrial districts; operations of a subsidiary land and development company; and methods of financing and constructing buildings for sale or lease.

John M. Budd

A. G. Baker

SYSTEMS & PROCEDURES ASSOCIATION DISCUSSES . . .

How to Manage Inventory

Railroad inventory management—one of the industry's most pressing problems—and the value to railroads of automatic data processing through use of electronic computers were the major themes of the third annual meeting of the Railway Systems and Procedures Association, held in the Morrison Hotel, Chicago, April 20-22.

Registration at the meeting totaled 302 and included representatives from railroads and other industries. The attendance, largest in the association's history, was indicative of widespread and growing interest in the group's overall objective: To help railroad management realize maximum effectiveness by promoting awareness of improved and less expensive business methods.

John M. Budd, president of the Great Northern, addressed the RSPA's opening session. "Inventory management is a troublesome question and one that seems particularly so on the GN," he said. "The inventory account has been soaring and is far higher than it should be. . . . Our principal concern is the problems having to do with items covering repairs and additions and betterments."

Are Storehouses in the Right Place?

"The vast changes which have taken place in the methods of performing maintenance work during the past few years," Mr. Budd continued, "may have changed the requirements with respect to store locations and methods of handling stock. There is a wide field for investigation in this respect and great possibility that we can get along with fewer stores than we required a few years ago. The possibilities of such development are aided and abetted by the faster and more flexible movement of goods from one place to another. We have eliminated the operation of supply cars and seem to be getting along economically and satisfactorily by supplementing train distribution with a limited use of trucks.

"It is interesting, too, to note that we now have under consideration eliminating stores within the Twin Cities. Within a radius of about ten miles we have five separate store operations. Two, and possibly three, of these may be eliminated." Mr. Budd said another phase of the inventory problem being explored on the GN is "centering of responsibility for materials in fewer hands." "I feel," he added, "that we are giving responsibility to too many people and that we will have to reduce that number materially before we can have proper control."

A. G. Baker, vice-president and purchasing agent, St. Louis Southwestern, also addressing the association's opening session, listed what he considered the most important elements of any plan of inventory management: The plan must receive "solid and continuing support by top management"; establishment of a long-range objective after agreement among all using departments; the plan should be orderly and progressive with "no attempt to place all material under control at one time"; the plan should be "carefully tailored to fit actual operating conditions"; plan should be easily adjustable to changing conditions; and, finally, teamwork should be promoted, confidence inspired and the human element fully evaluated. The Cotton Belt's inventory control plan, based on these principles, has led to "substantial reduction" in the road's inventories, Mr. Baker said.

How Inventory Control Works

E. V. Myers, the Cotton Belt's superintendent of motive power, described the relation between the road's inventory control plan and the mechanical department. The plan, he said, in addition to reducing inventory, assures that necessary material will be available when needed, and also precludes storing of unneeded material.

Mr. Myers cited, as one example of the plan's ability to assist inventory reduction, his department's experience with diesel locomotive spare parts. Before adoption of the plan, the Cotton Belt carried, for each diesel horsepower, $1.68 of spare parts. Under the control plan, only 55 cents of spare parts are carried for each horse-

E. V. Myers

Harold Van Gorder

power. "On car material," he continued, "under the material control plan, we have been able to reduce our average monthly inventory of material by $76,781. In 1951 we had on hand an average of 3.73 months' supply, compared with 2.15 months' supply under the plan."

A. C. Ernst, assistant general storekeeper of the Cotton Belt, in the final address of the first day, discussed in detail current methods of budget purchasing and their relationship to inventory management.

On the second day, addresses were made by Harold Van Gorder, James Thomson, B. E. Wynne and Roger R. Crane. Messrs. Van Gorder and Thomson are, respectively, director and staff assistant, methods planning division, U. S. Steel Corporation. Mr. Wynne, assistant to comptroller, Bessemer & Lake Erie, and 1953-54 president of the association, presided throughout the meeting. His address, "Railroad Applications Where Data Processing Could Be Integrated," will be abstracted in an early issue of *Railway Age*. Mr. Crane is director of Operations Research for Melpar, Inc., subsidiary of Westinghouse Air Brake Company.

Mr. Van Gorder and Mr. Thomson outlined the development, present status and objectives of the integrated data-processing system in operation at U. S. Steel and demonstrated how the system is based on two fundamentals: Recording data at point of origin on office machines which create five-channel punched tapes or tabulating cards as the automatic by-product of the recording operation; and perpetuating original and subsequent data by means of office machines which "read" and punch tapes or cards.

Mr. Crane discussed special types of inventory problems involving factors corresponding to those encountered by railroad purchases and stores departments.

The final session of the meeting included talks by John R. Spellman, manager, Arthur Andersen & Co., on "What Is an Electronic Computer and How Does It Work?"; Luther A. Harr, assistant sales manager, electronic computer department, Remington Rand, Inc., on "New Concepts in Inventory Management"; R. F. Osborn, manager—business procedures, major appliance division, General Electric Company, on "Problems Associated with Converting to a Univac Computer System"; and Robert T. Samuel and J. E. Sheehan, respectively manager of sales-transportation department and special representative, International Business Machines Corporation, on "Centralized Management of Decentralized Stock."

H. M. Rainie

H. M. Rainie, vice-president, Boston & Maine, spoke at the group luncheon on April 22. Mr. Rainie reviewed some of the problems of reduction of material balances, emphasizing that reduction will occur only as the result of cooperative effort between operating and procurement departments. Resulting benefits, he said, will not be confined to the purchases and stores department, but will be reflected throughout the railroad's entire organization.

"We have seen much in these last three days about how mechanical data-processing machines can be used, and will be used to give us refinements of speed, accuracy and economy to accomplish the job better and less expensively," Mr. Rainie concluded. "However, it must be kept in mind that we must clearly define the problem we are to submit to these machines, and once we get the answer, it must be properly applied. . . . There is a better realization today than ever before that material balances must be reduced and more realistically represent reasonable investment in materials and supplies. There can be no question about the direction we must follow."

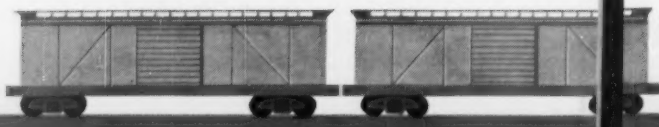
Printed proceedings of the three-day meeting, including full texts of all addresses, will be available shortly. During the meeting, an exhibit of electronic counting devices, the so-called common language machines, was sponsored by several manufacturers. The group's next meeting will be at the Hotel Morrison, November 16-18.

ANNUAL REPORTS (Supplementing list published in the April 5 issue of Railway Age, page 82)

Railroad		Operating Revenues	Operating Expenses	Fixed Charges	Net Income	Current Assets*	Current Liabilities*	Long Term Debt*
Bangor & Aroostook	1953	$12,972,171	$10,232,795	$785,703	$1,043,973	$4,772,865	$1,670,170	$20,751,030
	1952	13,161,196	10,197,398	716,820	919,028	4,970,861	2,184,844	22,368,115
Bessemer & Lake Erie	1953	30,107,470	18,391,095	512,712	6,879,527	12,148,121	11,505,058	18,813,081
	1952	25,915,034	17,540,507	392,536	5,940,533	11,156,073	11,396,874	16,605,331
Boston & Maine	1953	88,871,371	71,599,177	3,526,103	2,898,861	30,724,635	16,913,002	88,401,807
	1952	89,852,218	72,543,616	3,486,559	2,375,526	31,857,406	17,856,742	94,347,153
Canadian National	1953	696,622,451	659,049,036	29,376,160	244,017	185,181,199	98,294,826	589,811,690
	1952	675,219,415	634,852,915	25,415,189	142,327	177,324,754	95,147,073	605,494,829
Canadian Pacific	1953	470,571,371	441,686,799	14,236,161	31,450,462	166,444,523	75,850,745	126,114,000
	1952	457,808,969	428,878,189	12,504,010	39,078,545	202,364,139	85,438,508	112,516,000
Chicago & Eastern Illinois	1953	36,483,859	27,954,317	1,090,704	2,333,045	7,914,159	6,619,561	39,033,544
	1952	35,379,805	26,720,169	1,070,490	2,313,333	8,872,399	6,833,671	38,925,287
Chicago & North Western	1953	204,344,089	175,528,189	3,395,802	4,248,078	58,758,254	37,457,821	194,336,915
	1952	206,164,771	178,039,980	3,038,193	4,096,622	62,081,198	40,363,101	187,943,078
Chicago & Western Indiana	1953	‡	‡	2,785,402	85,252d	3,486,329	2,137,848	83,638,920
	1952	‡	‡	3,058,295	264,006	3,835,007	2,756,399	83,744,005
Chicago, Milwaukee, St. Paul & Pacific	1953	259,860,191	218,183,759	4,415,366	10,013,018	90,096,461	42,699,234	218,682,213
	1952	269,465,584	222,122,738	4,492,459	11,262,693	97,958,321	48,831,084	225,334,098
Delaware & Hudson	1953	55,256,873	41,834,044	2,312,154	6,382,333	21,542,380	4,596,913	95,090,319
	1952	57,632,724	43,772,655	1,987,910	5,007,733	23,082,636	6,827,197	101,254,849
Denver & Rio Grande Western	1953	84,701,139	54,939,994	2,076,894	10,208,813	45,286,832	21,753,871	90,166,210
	1952	82,134,558	55,443,200	2,052,024	8,470,193	49,977,285	21,943,473	87,823,730
Detroit & Mackinac	1953	2,131,242	1,446,149	69,230	337,068	514,228	483,979	2,017,292
	1952	2,026,235	1,432,582	73,321	298,749	619,427	520,549	2,236,985
Detroit, Toledo & Ironton	1953	22,468,195	15,322,648	466,732	2,855,122	7,549,117	5,229,539	17,116,548
	1952	17,955,016	11,937,793	416,384	2,384,824	8,967,628	5,115,894	15,099,455
Duluth, Missabe & Iron Range	1953	63,214,309	36,749,641	585,820	12,789,089	19,057,478	20,086,363	21,299,052
	1952	48,478,910	35,611,189	470,862	4,973,939	12,790,030	15,907,907	20,700,000
Elgin, Joliet & Eastern	1953	55,321,510	43,703,378	611,323	2,889,151	15,934,859	19,935,798	18,846,400
	1952	49,039,952	32,372,166	532,257	4,477,140	13,793,977	18,829,911	18,464,560
Green Bay & Western	1953	4,679,704	3,117,033	20,260	485,061	1,790,692	1,735,967	none
	1952	3,711,247	2,631,238	20,038	372,590	1,274,700	784,600	8,218,218
Illinois Central	1953	308,373,591	221,014,300	8,631,835	26,369,081	111,413,540	73,655,961	193,468,000
	1952	306,855,846	223,365,039	10,085,751	23,203,516	113,480,265	75,304,249	204,324,000
International of Central America	1953	14,463,486	12,805,727	285,721	664,838	7,115,714	1,380,912	5,858,977
	1952	13,341,155	11,472,391	302,595	807,482	7,028,046	1,547,580	6,107,933
Kansas City Southern	1953	47,861,404	29,963,412	2,289,289	6,602,281	18,581,084	11,725,917	61,171,000
	1952	47,442,915	27,555,603	2,327,126	5,974,521	20,949,748	14,737,009	61,278,101
Lehigh & Hudson River	1953	3,500,449	2,214,731	11,993	470,959	1,283,580	585,612	537,453
	1952	3,342,529	2,183,221	14,289	527,870	1,111,580	512,545	652,293
Louisiana & Arkansas	1953	30,476,140	19,045,992	993,294	5,554,494	19,171,419	9,702,898	28,029,604
	1952	26,461,854	16,485,208	936,910	4,232,084	16,430,381	8,397,437	27,991,155
Louisville & Nashville	1953	232,983,209	168,867,363	8,939,832	30,653,516	85,998,536	40,775,409	275,518,346
	1952	226,723,879	173,247,532	8,707,939	25,098,368	73,365,995	37,971,400	259,789,116
Maine Central	1953	25,408,365	19,617,118	1,467,927	1,175,907	8,898,082	5,921,349	26,138,320
	1952	26,823,601	20,631,737	1,210,901	1,560,879	8,749,419	6,005,495	26,350,612
Minneapolis, St. Paul & Sault Ste. Marie	1953	39,706,940	35,412,225	121,598	504,816	16,462,173	9,126,242	24,775,588
	1952	42,170,225	36,398,429	87,634	1,040,532	17,207,465	9,645,561	25,434,400
Missouri-Kansas-Texas	1953	85,545,555	62,854,147	2,984,705	6,342,927	30,491,186	16,858,437	95,135,650
	1952	85,115,224	61,315,953	2,937,426	7,548,031	29,954,554	17,114,559	92,449,965
Mississippi Central	1953	2,741,100	2,067,633	67,472	210,699	937,119	376,429	1,915,370
	1952	2,693,299	2,019,047	43,158	180,611	1,089,485	484,326	1,113,950
New York Central	1953	825,348,776	683,643,179	49,153,329	34,002,039	172,864,635	133,726,108	800,181,130
	1952	806,926,218	681,926,665	48,242,547	24,716,337	177,096,079	134,143,698	789,342,185
New York, Ontario & Western	1953	7,063,332	6,478,242	1,496,207	2,234,827d	1,027,503	8,589,097	38,317,401
	1952	7,046,760	6,271,084	1,501,776	1,903,216d	1,163,730	8,013,206	38,733,510
Norfolk & Western	1953	189,550,268	136,449,628	1,788,668	28,077,419	81,203,104	41,155,663	35,791,700
	1952	195,650,566	138,580,357	1,432,091	29,300,910	89,385,869	48,082,793	35,791,700
Norfolk Southern	1953	11,127,485	8,560,911	272,548	772,812	2,864,724	1,735,047	5,384,242
	1952	11,698,783	9,367,026	263,015	525,406	3,112,184	1,874,181	5,901,715
St. Louis-San Francisco	1953	140,925,194	103,847,498	4,006,181	12,261,164	60,381,227	33,641,599	137,505,520
	1952	140,627,081	102,648,605	3,984,815	14,622,710	62,179,644	31,895,042	137,121,526
St. Louis Southwestern	1953	72,642,756	46,466,922	1,043,162	9,216,104	33,334,917	18,591,791	24,368,789
	1952	73,589,975	41,009,446	1,145,238	13,105,741	36,229,405	21,500,812	30,368,789
Savannah & Atlanta	1953	3,943,196	2,606,593	80,001	304,203	2,333,558	1,587,086	1,058,516
	1952	3,687,950	2,368,869	58,557	419,711	2,294,409	1,497,724	1,207,500
Spokane International	1953	3,357,078	1,954,622	51,456	501,691	1,529,353	968,718	3,887,555
	1952	2,896,504	1,929,461	34,145	363,433	1,298,753	718,340	3,699,354
Virginian	1953	37,916,624	25,845,541	2,159,559	5,449,279	22,163,399	11,574,606	73,389,580
	1952	44,054,851	27,540,577	2,084,851	6,814,788	24,367,688	13,046,449	70,575,610
Wabash	1953	122,210,124	88,784,197	2,593,264	10,733,602	37,036,545	27,502,471	98,524,194
	1952	115,884,741	84,700,594	2,385,720	10,864,016	36,694,115	25,866,727	92,916,298

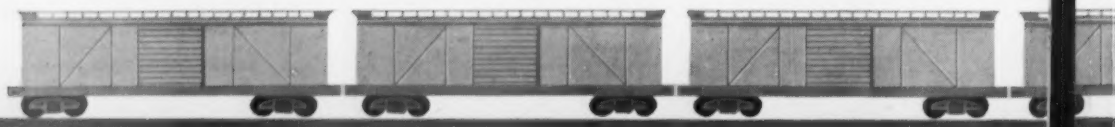
* On December 21. d Deficit. ‡ Absorbed by joint facility account.

Here's what 17% more Horsepower MEANS TO YOUR



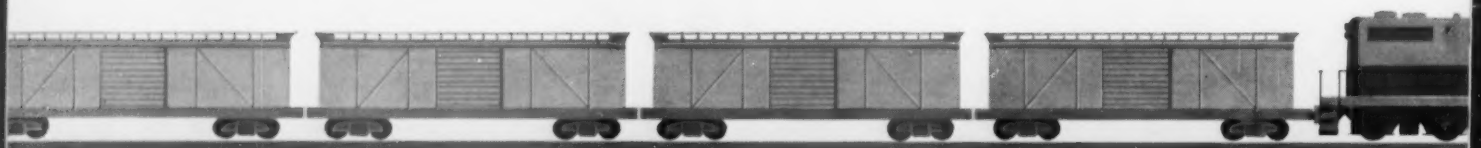
Compared to one 1500-h.p. GP7

1 1750-H.P. GP9 UNIT CAN PULL 3,000 TONS 8%



Compared to two 1500-h.p. GP7's

2 1750-H.P. GP9 UNITS CAN PULL 4,000 TONS 8%



Compared to three 1500-h.p. GP7's

3 1750-H.P. GP9 UNITS CAN PULL 5,000 TONS 8%

YOU CAN earn more in '54—and for years to come—with new General Motors Diesel locomotives.

These great new units have up to 17% more horsepower and increased tractive effort—can haul *more* tons on today's schedules or haul the same loads on *faster* schedules.

And you can also get this increased performance with your older General Motors locomotives by having Electro-Motive bring them up to the same ratings and performance standards as new models.

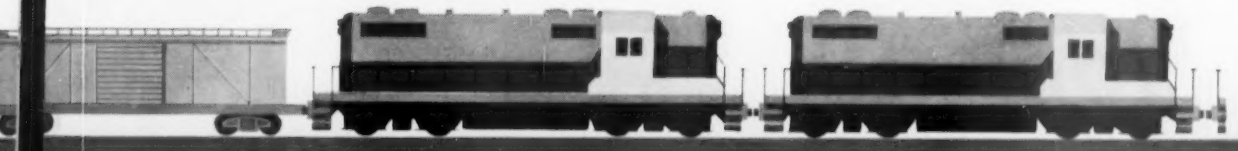
For example, your F3 and F7 units can be converted to 1750-h.p. F9 models and returned to you with a full new-locomotive warranty.

But increased earnings are only part of the story. Improvements in design of major components bring big maintenance savings, too. For full details, call in your Electro-Motive representative or write:

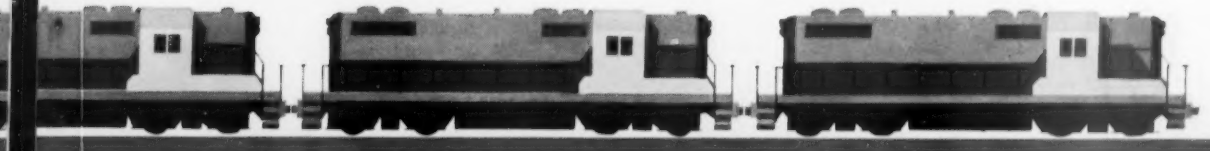
in General Motors Locomotives

RAILROAD

FASTER OR 450 MORE TONS AT THE SAME SPEED



FASTER OR 600 MORE TONS AT THE SAME SPEED



FASTER OR 750 MORE TONS AT THE SAME SPEED

THE BEST LOCOMOTIVES ARE EVEN BETTER TODAY!

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS LOCOMOTIVES

GENERAL MOTORS La Grange, Illinois • Home of the Diesel Locomotive
In Canada: GENERAL MOTORS DIESEL, LTD., London, Ontario

in 1953 foundry rejects dropped to an all-time low in AMCCW

Just a line from an inspection department report but it means . . .

safer, better, chilled car wheels

When the general inspector visits an AMCCW foundry, he not only checks the inspection methods but molding procedure, cupola, pouring, and annealing practices. It is also standard practice for him to check all gauges in use by the resident inspector, as illustrated.

Map of AMCCW plant locations shows why you get quick low-cost delivery when you order chilled car wheels from the AMCCW plant near you.

When inspectors find fewer wheels to reject during the same year that some of the inspection tests became 25% tougher*, that's a good indication that the product is being improved. In this case it means that AMCCW plants are producing safer, more serviceable wheels for shipment.

Why can these chilled car wheels take it better than ever before? There are three simple reasons.

1. Improved design—more brackets, thicker, heavier, and more continuous flange support and heavier tread.

2. Improved manufacturing methods.

3. The continued vigilance of the Association's uniform inspection by means of resident inspectors, general (traveling) inspectors, and central office inspection of production records.

For a more complete description of the improved chilled car wheel that earned this all-time low in rejects but stands high in safety performance, send for the free booklet, "The Chilled Car Wheel."

**Time of thermal test and number of blows in impact test each increased 25% by the AAR in February 1953.*

Low first cost • Low exchange rates • Reduced inventory • Short haul delivery • Increased ton mileage • High safety standards • Complete AMCCW inspection • Easier shop handling

Association of Manufacturers of Chilled Car Wheels

445 North Sacramento Boulevard, Chicago 12, Illinois

Albany Car Wheel Co. • American Car & Foundry Co. • Marshall Car Wheel & Foundry Co. • Southern Wheel (American Brake Shoe Co.) • Griffin Wheel Co. Pullman-Standard Car Mfg. Co.

Unshackle your Locomotives!

Specify 24-RL Brake Equipment for your road and road switcher locomotives. Locomotives so equipped are available for any assignment.

Westinghouse Air Brake
COMPANY

AIR BRAKE DIVISION WILMERDING, PA.

Photos: courtesy The Budd Company

Passenger comfort, unlimited

Today's modern air-conditioned passenger cars call for simple and reliable apparatus which must provide dependable service at the lowest over-all cost. That's why it's so important to investigate the tremendous advantages in EDISON batteries for standby power for the electrical systems of these cars. They are of steel-cell construction, built to take rugged handling like no other kind of battery construction can.

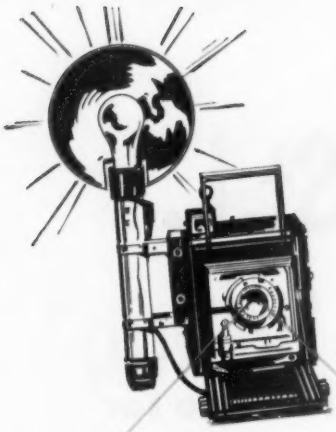
Electrically, too, EDISON batteries are profitably different—they have no prescribed discharge limits and, therefore, operate self-regulating a-c inversion apparatus correspondingly longer without injury to the battery. Recovery after discharge is usually just as rapid as generator output permits, resulting in high road capacity and virtual elimination of yard charging.

Roads using as many as 2000 sets of EDISON batteries in both air-conditioned and non-air-conditioned cars report average service life ranging from 18 to 26 years. Find out now about EDISON's exclusive advantages by sending for our bulletin 3802 and requesting a visit from the Edison field engineer nearest you. Write Edison Storage Battery Division, Thomas A. Edison, Incorporated, West Orange, New Jersey.

Most dependable power . . .
lowest over-all cost
you get both with an EDISON

EDISON
Nickel • Iron • Alkaline
STORAGE BATTERIES

EDISON ALSO MAKES THE FAMOUS "V.P." VOICEWRITER AND THE TELEVOICE SYSTEM



THE CAMERA SHOWS YOU WHAT AMERICAN RAILROADS THINK OF Automatic INDUSTRIAL TRUCKS

These candid "shots" are typical of modern railroad materials handling . . . especially because they also picture Automatic . . . *the truck so many railroads use.*

Automatic's versatile TRANSVEYOR—short, compact, maneuverable—is a railway favorite because of its ability to maneuver inside boxcars. Exclusive Balanced Action automatically equalizes load on both wheels regardless of floor conditions.

At work for railroads everywhere...and doing a tremendous *variety* of "Railway-Keyed" jobs...are rugged, versatile, low-maintenance Automatic trucks. Automatic offers the widest selection of electric-driven industrial trucks for Railway purposes... Skylift fork trucks, FP-20 Platform Trucks, Transporters, Transveyors, and Tractors are included in the extensive Automatic line. Operator-led to riding type, 1,000 to 80,000 pounds capacity...there's an Automatic that will push, tow, lift, stack, or even dump...as the materials handling job requires. To bring the *best* to your *own* railroad operations...investigate Automatic, today!

Pictured here are the economical TRANSRIDER, which combines the low initial cost of operator-led trucks with advantages of riding-type fork truck operation, and the rugged FT Center Control Tractor, which draws trailer loads of 14,000 pounds all day...or up to 38,000 pounds intermittently.

For the "last word" in dependable, quick, efficient baggage handling, the railroads have for years turned to this tough BASF Baggage Platform Truck...a straight frame model with 4,000-pounds capacity. This unit is also furnished in drop frame construction.

MAIL COUPON TODAY for complete information on "Railway-Keyed" automatic trucks.

Automatic®

WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC-DRIVEN INDUSTRIAL TRUCKS

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Please send me complete facts on Automatic electric-driven industrial trucks for Railway purposes.

Company Name.....

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M. & St. L.

and Johnny Careful...

Teammates in Drive for

Perfect Shipping

Johnny Careful, the old friend of Freight Shippers and their Railroads, is starring this year as a big league pitcher, throwing his Fast Ball to cut down Freight Loss and Damage. One of his hustling teammates, in the drive for the Perfect Shipping Pennant, is

THE MINNEAPOLIS & ST. LOUIS RAILWAY

Each April, America celebrates Perfect Shipping Month and takes stock of progress. But, every month the year round, shippers and the workers who pack, label, load and unload freight do better jobs in reducing loss and damage.

The M. & St. L. and all the other roads, which transport most of the country's freight, play a big part in Perfect Shipping. Shippers alone can't do the whole PS job and the railroads, year after year, contribute greater efficiency. They provide better and better cars, locomotives, tracks, yards, loading facilities and everything else that makes for

PERFECT SHIPPING

In the Midwest, a leader always in the PS drive is the M. & St. L., which celebrates Perfect Shipping Month 12 times a year for

Finer Faster Freight Service

• To Shippers and Receivers • To Connecting Railroads

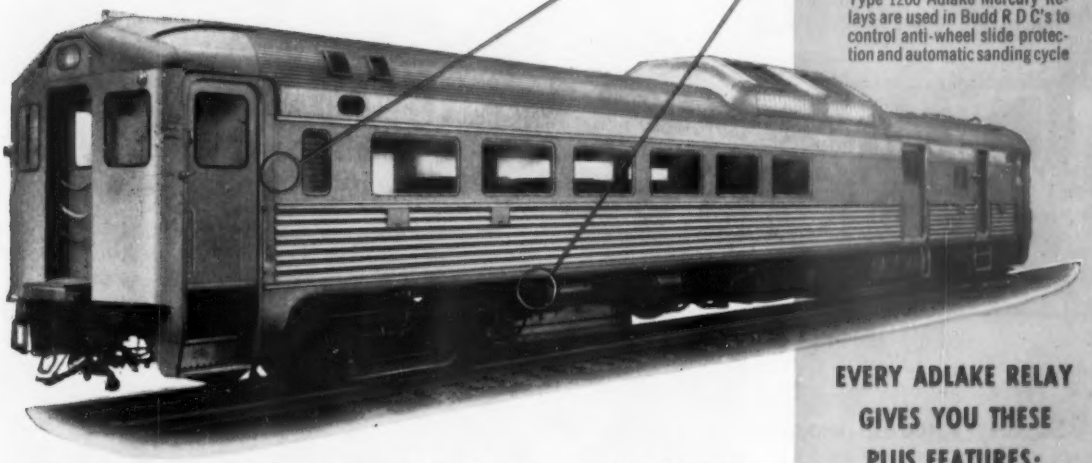
The* MINNEAPOLIS & ST. LOUIS *Railway

TRAFFIC OFFICES IN 36 KEY CITIES

PERFECT SHIPPING

THE MINNEAPOLIS & ST. LOUIS RAILWAY CO. — THE PEORIA GATEWAY

Adlake relays "put on the brakes" in Budd RDC



Type 1200 Adlake Mercury Relays are used in Budd R D C's to control anti-wheel slide protection and automatic sanding cycle

Relays that control brake operation in a railroad car must combine many features...absolute dependability, immunity to shock and vibration, maintenance-free operation, and a hermetic seal that keeps out dust, dirt and moisture. Specifications like that call for ADLAKE Mercury Relays!

What's more, ADLAKE Relays have other valuable features that are often vitally important in different installations. For instance, their time delay characteristics are fixed and non-adjustable, even under the most adverse conditions of temperature and moisture. Their mercury-to-mercury contact gives them an ideal "snap" action, and they are silent and chatterless.

ADLAKE Relays can play a valuable part in your modernization program. Send for the ADLAKE Relay Catalog today...no obligation, of course. The Adams & Westlake Company, 1150 No. Michigan, Elkhart, Indiana; In Canada, Powerlite Devices, Ltd., of Toronto.

EVERY ADLAKE RELAY GIVES YOU THESE PLUS FEATURES:

Hermetically Sealed
dust, dirt, moisture, oxidation and temperature changes can't interfere with operation.

•

Silent and Chatterless

•

Requires No Maintenance

•

Absolutely Safe

•

Mercury-to-Mercury Contact
prevents burning, pitting and sticking.

Adlake 97th year of serving the transportation and building industries

THE Adams & Westlake COMPANY

Established 1857 • ELKHART, INDIANA • New York • Chicago
Manufacturers of ADLAKE Specialties and Equipment for the Railway Industry

All 3 Had A Hand In This Oil...

Socony-Vacuum worked closely with operators and builders to create lubricating oil of unsurpassed quality!

Today's Diesel locomotives, with their higher operating speeds, temperatures and pressures, present many complex problems which—experience has shown—can be solved only through cooperation of operator, builder and oil supplier. For many years now, Socony-Vacuum has been an integral part of this cooperative effort.

As a result of this experience—plus our own exhaustive field and laboratory evaluations—we now have what we believe to be the finest Diesel lubricating oil yet developed—Gargoyle D.T.E. 4DR—an oil with highly effective anti-foaming action, unusually strong resistance to oxidation, exceptional detergency.

Our long experience—our proved products—are available to help solve *your* problems. Why not call us?

Railroad Lubricants

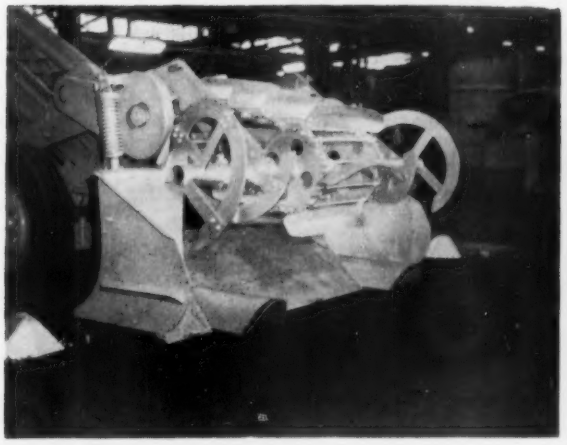
SOCONY-VACUUM

Correct Lubrication

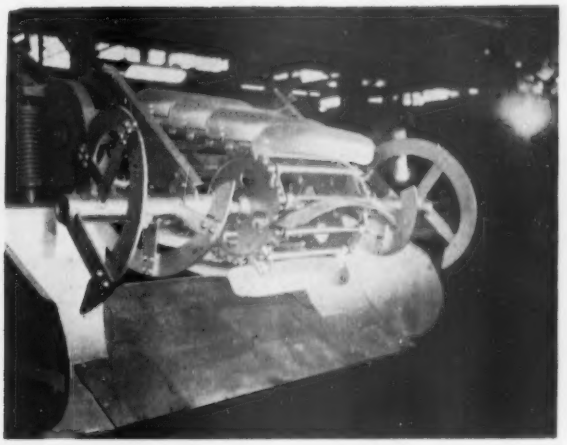
WORLD'S GREATEST LUBRICATION KNOWLEDGE AND ENGINEERING SERVICE

SOCONY-VACUUM OIL COMPANY, INC., Railroad Division, 26 Broadway, New York 4, N. Y.

What's New in Products



Hi-Loader adapted for track cleaning.



Hi-Loader equipped for stockpile loading.

Dual Purpose Moldboard

The Athey Products Corporation, Chicago, has announced a modification of the moldboard on the Athey Hi-Loader which makes it adaptable to either track cleaning operations or stockpile loading. The tunnels on the moldboard, which adapt the machine for cleaning both between and outside the rails are now removable. After the tunnels are removed two plates are bolted on the moldboard to give a smooth surface which, it is stated, allows the machine to better crowd into stockpiles of sand or gravel and to perform a considerably more efficient loading job •

Lightweight Roofing

A new corrugated aluminum industrial roofing and siding material of only 0.024-in. thickness, fabricated of the same high-strength alloy used in the standard 0.032-in. material, has been announced by the Aluminum Company of America, Pittsburgh. The new roofing and siding sheets are supplied with corrugations $\frac{7}{8}$ in. deep and with a pitch of 0.267 in. These are identical with the depth and pitch factors of the heavier product. The fasteners and erection methods used with the present heavier sheet are also applicable to the 0.024-in. product.

This new sheet, it is said, can be used with substantial economies for both new construction and reroofing jobs. It is also reported to be well adapted for use as the inner sheet, or as both the inner and outer sheets, of insulated wall construction that incorporates a center section of insulating material such as glass fiber •

Portable Meters

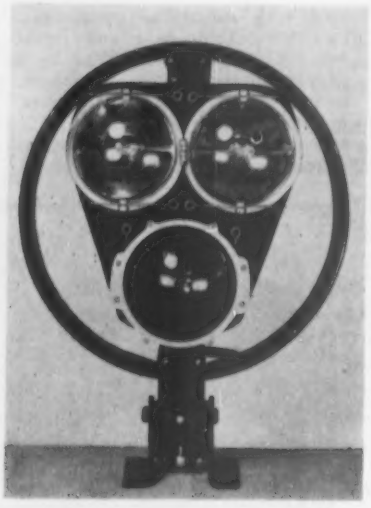
A new line of miniature portable d-c instruments (accurate within 1 per cent), which incorporate a self-shielded mechanism as well as other

improved features, has been announced by the Weston Electrical Instrument Corporation, 614 Frelinghuysen ave., Newark 5, N. J.

Known as Model 281, these instruments employ the Weston core magnet mechanism which provides such shielding that the magnetic field created by a conductor carrying 15,000 amp, at a distance of 3 ft from an instrument, is said to cause a temporary error in indication of less than 1 per cent. The instruments can also be used in close proximity to magnetic materials without affecting their accuracy. The larger moving coil employed is reported to give improved performance with a high torque-to-weight ratio, and to allow increased sensitivity where needed.

Furnished in complete Bakelite cases, Model 281 instruments withstand a dielectric test of 2,600 volts between case and terminals, applied in accordance with ASA specifications. Scales are hand calibrated, with mirror and knife edge pointers combined to eliminate parallax errors. They are supplied in a wide variety of ranges in single and multirange voltmeters, ammeters, and volt-ammeters.

Measuring only approximately 4½ by 4½ by 1½ inches, Model 281 instruments are especially adaptable for use in shops, outdoor inspection work, and wherever a precision instrument of miniature size is required •



Mars Tri-Eight Light

At the request of some railroads for a locomotive signal light having a more powerful beam than is possible with a single 200-watt sealed beam headlight lamp, and which is also free of the need for reflector cleaning and maintenance, the Mars Signal Light Company, Chicago 51, has announced its Tri-Eight signal lights.

This light makes use of three 200-watt sealed beam headlight lamps, two for the white beam for highway crossing protection and one with an AAR red filter for emergency flagging protection.

The beam pattern is a horizontal figure 8 which insures that the beam of light strikes highways crossing the railroad, whether the crossing is at grade, or below or above grade.

A separate resistor and circuit is provided for each of the lamps so that in case one lamp burns out the others will still be operative.

The change from white to red, or vice versa, is made automatically by means of one relay •

Four-Wheel "Banty" Tractor

A new four-wheel "Banty" gasoline tractor, Model 460, for use in the trackless train system of material handling, has been developed by Mercury Manufacturing Company, 4044 So. Halsted st., Chicago 9.

Two models are available. The standard is rated at 2,300-lb maximum drawbar pull and the heavy-duty model at 3,000 lb maximum drawbar pull. The new tractor has an outside turning raduis of 62 in., only slightly greater than that of the three-wheel Banty. Steering is by a centrally located inclined Ross cam-and-twin-lever gear, fitted with an automotive steering wheel.

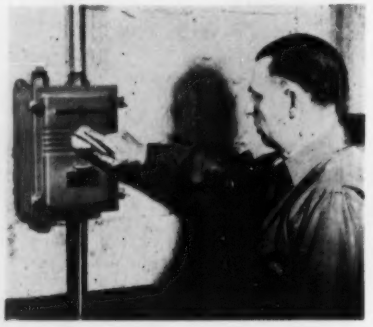
The power plant is a four-cylinder Waukesha engine. A selective synchromesh transmission has three speeds forward and one reverse. The final drive and transmission gearing operate in an oil bath. All other bearings are provided with Alemite fittings. Brakes are internal expanding, self-energizing hydraulic type within the drive wheels (foot pedal controlled). Pneumatic tires are optional •

New Paper Provides Multiple Copies Without Carbon

A new paper which provides multiple copies of business forms without carbon paper inserts has been announced by the National Cash Register Company, Dayton, Ohio. Advantages of using the new paper for multiple copies are said to include elimination of smudging, speeded efficiency in handling forms, and an end to the dirt and bother of carbon paper inserts.

Called NCR (No Carbon Required) Paper, the new product will be marketed in limited quantities this year and will be priced to compete with carbon paper systems, the company said.

The process uses combinations of two different coatings on ordinary paper, depending on how many copies are desired. In a business form containing an original and two copies, for example, the underside of the first sheet is coated with a colorless chemical and the topside of the second sheet with a clay-like material. The impact of a typewriter character or pressure of a pencil on the first sheet drives the colorless chemical into contact with the clay-like coating on the topside of the second sheet. This causes an immediate chemical reaction which turns the clay-like material blue and leaves a clean, sharp impression on the second sheet. The back of the second sheet, also coated with the colorless chemical, in turn passes on the impression to the top of the third sheet, which again is coated with the clay-like material. Up to seven copies can be made in this fashion on an electric typewriter and up to four handwritten copies •



Lead-Plated Switch Enclosures

Lead-plated, sheet-steel enclosures for safety switches and circuit breakers are being produced by the Trumbull Components Department of General Electric Company, Plainville, Conn. The new enclosures are for outdoor use and other applications where cast-iron enclosures were previously used. They are designed for use where humid, dust-laden and corrosive atmospheres prevail. According to test data, the inert lead coating, unlike cast-iron surfaces, effectively resists the corrosive effect of acid, alkali and salt spray.

Lead-plated enclosures also are said to be lighter than cast-iron types and accordingly easier to handle and install •

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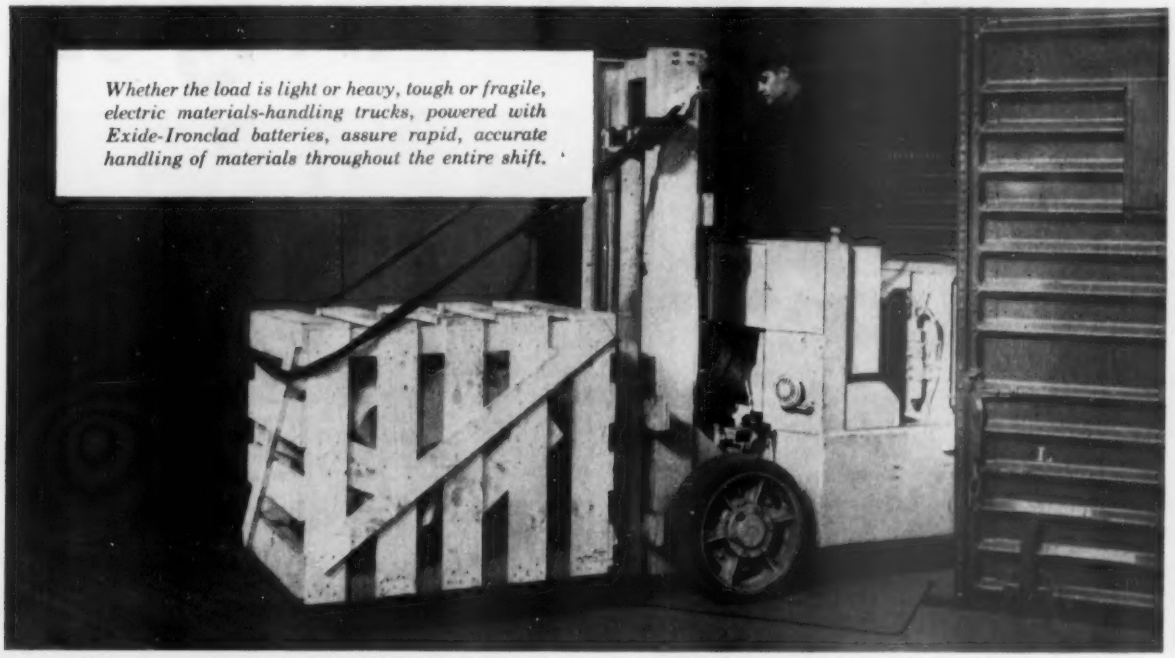
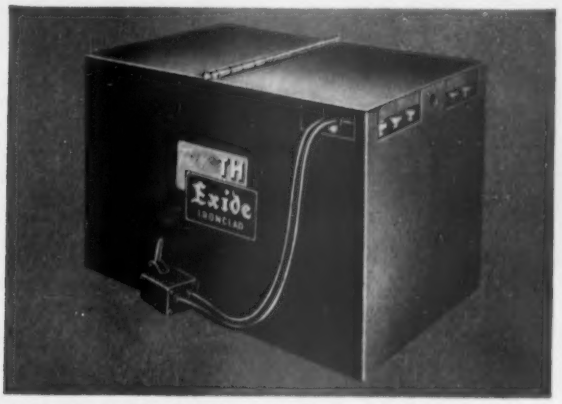


Whether the load is light or heavy, tough or fragile, electric materials-handling trucks, powered with Exide-Ironclad batteries, assure rapid, accurate handling of materials throughout the entire shift.

YOU GET uniform performance throughout each shift when battery electric trucks are powered by Exide-Ironclads. Your trucks handle as much load during the last hour as during the first . . . with no unscheduled down time. Lower costs for operation, maintenance and depreciation make Exide-Ironclads your best power buy—AT ANY PRICE!

THE POSITIVE PLATES are the heart of any battery. Only Exide uses a slotted tube construction. By use of tubes, more active material is exposed to the electrolyte, providing *greater power*. Also, more active material is retained, giving *longer working life.*



THE NEW THRIFTY HAULER! The improved industrial truck battery. *Non-oxidizing* plastic power tubes assure longest battery life, more capacity in the same space. For full details, call your Exide sales engineer—write for Form 1982 (Installation and Maintenance of Motive Power).

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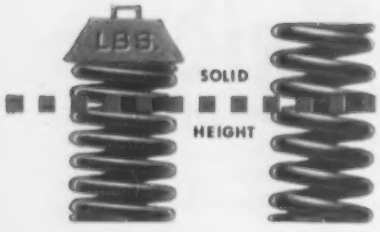
They're making older

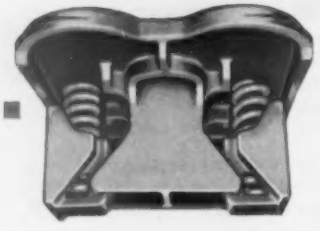
Santa Fe Reefer being brought up to modern riding standards. This car is one of thousands that have been equipped with smooth-riding ASF Ride Control Packages. Installation is simple: just jack up the bolster, pull all the old short-travel springs, slip in the Ride Control Package.

Why a small per-car investment in Ride Control Packages can pay you big returns

SMOOTH, SAFE RIDING AT SPEEDS TO 100 MPH



Long-travel springs . . . for soft, impact-absorbing spring action, whether the car is empty or fully loaded. Your choice of 2½" or 3" spring travel.

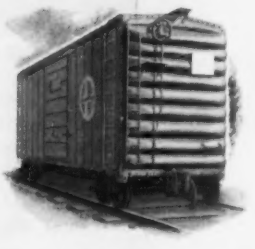


Constant friction control . . . prevents harmonic oscillation of springs. Induction-hardened friction surfaces *keep* it constant —for years of service.

FEWER LADING DAMAGE CLAIMS

The inevitable result of a smoother riding freight car is greater protection of lading —especially when running in modern speed ranges.

LOWER MAINTENANCE COSTS



The car that rides smoother is the car that requires less maintenance and fewer repairs. And, even the roadbed stands up longer!

On the Santa Fe, a continuous program of modernization adds weight to the slogan, "Ship Santa Fe all the way." Here's how

cars ride better than ever!

The Santa Fe repair program offers a good example of how older freight cars can be brought up to modern riding standards—at costs which are soon written off.

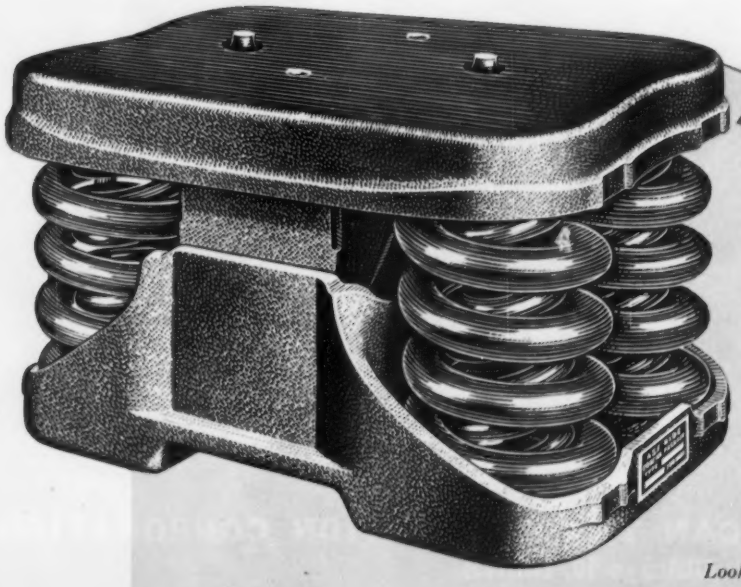
During scheduled repairs, the Santa Fe has equipped 4271 reefers and 983 50-ton box cars with ASF Ride Control® Packages, the self-contained units with built-in long-travel springs, *constantly controlled* by induction-hardened friction surfaces.

Standard procedure, as cars are shopped, is to first check the condition of the trucks. If side frames and bolsters don't meet AAR standards, they are replaced with ASF Ride Control Trucks. But in the thousands of cases where trucks are up to standard, the old short-travel spring groups are simply replaced with Ride Control Packages. Time required for the change: less than a half-hour.

Result? Cars that ride better than ever before. *Cars that cut lading claims and cost less to maintain.* In short, here's how a leading railroad is providing smoother, safer freight hauls. And, *repeat orders* for Ride Control Packages prove that the Santa Fe's modernization program is paying off.

Find out how Ride Control Packages can help you keep your older cars in first class condition—and cut lading claims as well. Your ASF Representative has facts and figures on the practicability of making *smoother riding* another objective of any general repairs program. Write us today!

Bring your older cars up to modern riding standards



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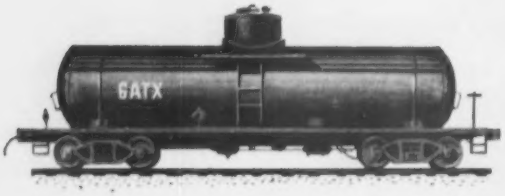

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More Information Needed on Specific Costs

Most railroads are becoming increasingly active in developing rates designed to get back onto the rails more of the traffic which economically belongs there. This effort is as much in the public interest (i.e., in minimizing transportation costs) as in that of the railroads. But, for this movement to go as far as it ought to go, a good many railroads have got to know much more about the costs of specific movements than they know now.

Knowledge of specific costs comes pretty close to being the bone and sinew of successful competitive business—especially one engaged in building up its volume and its gross and net earnings. Such detailed information is not so essential for a safe and comfortable monopoly—and the acute need for it, now, by the railroads is just one of the many fundamental changes which mark the transition of the industry from basically monopolistic to completely competitive.

So-called "average costs"—such as those computed by the ICC—are of interest and value for broad comparisons, but do not provide the kind of specific cost information that an individual railroad needs for establishing its own policies realistically, e.g., (1) as to what traffic is to be most actively solicited; (2) what rate changes are to be advocated; or (3) what services are to be abandoned. The actual costs of an individual railroad —or for different parts of the same railroad—may vary widely from the "average." The railroad which would be governed in its actions by such "averages" might be working in entire disregard of its own actual situation, and hence greatly to its own detriment.

Knowing costs is one thing. Being a slave to cost information is something quite different. One of the principal advantages of being fully aware of specific costs is the concurrent knowledge of the limitations and imperfections of such information. It usually isn't the man with a full knowledge of cost data and how they are built up who is tempted into error by unwarranted reliance on the validity of such information. Instead, the man that makes most of the mistakes with costs is usually the one who can't be bothered with digging out specific details from his own local experience, but relies on some "average" figure. A couple of favorite cost figures, in fact, are those of average ton-mile and average car-mile earnings for all traffic—figures which probably are almost completely meaningless when applied to specific traffic on a specific railroad.

Cost information isn't of much use unless it is reasonably up-to-date—because changed conditions (e.g., increased switching because of changed consignees) could radically and quickly alter the cost data, even with no observable change in the total volume movement of a commodity. One of the disadvantages of "special studies"—besides their great cost—is the fact that they are frequently out-of-date before they are complete.

On the other hand, compiling current costs on practically all operations would entail enough expense to shave away all the net income of even a relatively profitable railroad. The collection and analysis of cost information—just like the profit and loss situations it should bring to light—has to have a constant profit yardstick laid on it. No series of cost reports can be justified unless they customarily yield profit information greatly exceeding their cost of compilation. Once the kinds of "key" data that are going to be of the greatest practical use are decided upon, ways of obtaining such information at minimum cost (e.g., electronically or by sampling techniques) can be intelligently explored.

So-called "direct" or "out-of-pocket" costs are the most useful—particularly in showing a red light on countless profitless situations in which every railroad is involved. If any figure other than the "direct" is used in such situations, there always exists the temptation to try to explain away the showing—but red ink alongside a patently honest figure of bare "direct" cost, with no theory in it, is something nobody will dismiss. It is a kind of figure that argues for itself, and justifies whatever remedial steps are necessary. And nobody who operates with "direct" costs as his principal yardstick is ever unaware that there is a considerable percentage above this "direct" figure which revenues will have to match, on the average, to keep the operation going.

The old-time country storekeeper—with no competition except the mail order house which was at least a week away—did not have to watch individual items closely. What he lost on one, he could make up for by a double profit on something else. To stay in business today, the storekeeper has to try to make a profit on every item he handles; and not too large a profit on any one, lest he drive the customers away. And that also is what has happened in transportation.

THE FRISCO PHILOSOPHY: Good management is based on competent men, interested in their jobs and in the welfare of their company. A panel discussion group at the Eureka Springs management seminar.

People Are Management

How the Frisco places managerial responsibility, selects and trains men to handle this responsibility

The big problem facing the St. Louis-San Francisco Railway Company in recent years has been how to improve service so as to attract patronage in the face of intense competition, and how to reduce expenses in the face of fast-rising costs. It is a problem common to all railroads. The Frisco has met this problem by paying particular attention to *people*—to the men who manage and supervise its affairs, and to the thousands of employees who conduct its day-to-day operations. In fact, it is distinguished among railroads by the amount of sincere attention it has given to the development of people, and relating the efforts of those people to the affairs of the

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RAILROAD MANAGEMENT TODAY

Beginning a series on contemporary management: its goals, methods, and outlook

What is present-day railroad management striving to achieve? And how is it seeking to achieve it? These and other questions concerning railroad management, the problems it faces and how it is meeting those problems, will be covered in an unusual series of articles beginning in this issue.

This series is being presented by *Railway Age* as a contribution toward the industry's constant efforts to better itself by improved methods and more effective techniques.

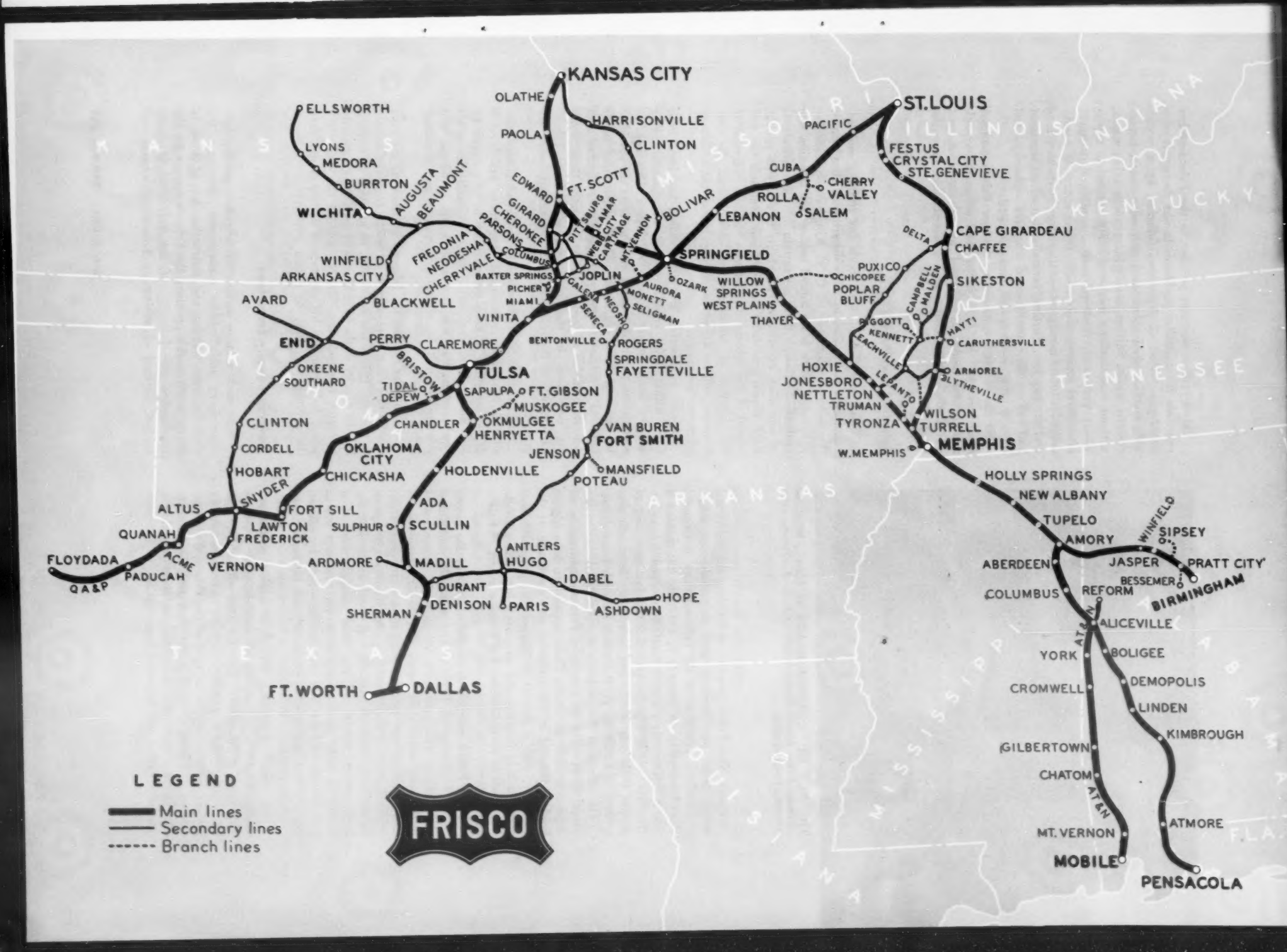
To give the series a tangible base, it has been prepared in the form of a case history of a single railroad—the St. Louis-San Francisco. Individual articles will examine the problems faced by Frisco management, and how those problems are being handled.

Why The Frisco? **Railway Age's editorial staff selected the Frisco for this series because it is an average-sized railroad (5,095 miles of line), because its principal problems are more or less common to the entire industry, and because of its forward-looking, effective management.**

All of the material in the entire series was gathered and written by *Railway Age* staff editors on the basis of their personal inspection of the entire railroad on extensive field trips, and after personal interviews with Frisco employees, supervisors, and managers at all levels. These articles are not being presented to extoll the Frisco management's virtues, nor are they intended to belittle its many accomplishments.

Obviously, any articles dealing with the management of a particular railroad must include the people who are management—what they think and believe, and how they react to different situations. That is part of the background from which managerial decisions come.

The group of articles will be presented at intervals, over a period of several months.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THE NEW CTC CONTROL BOARD at Amory, Miss., is examined by Clark Hungerford and C. J. Stone, vice-president—operation.

company. This Frisco practice of building the individual stems from the interests and philosophy of Clark Hungerford, president of the railroad since it emerged from trusteeship on January 1, 1947. He has molded it into a deliberately planned, carefully mapped out policy. However, his is a philosophy that the fair treatment of people, both individually and collectively, is an effective method of obtaining greater value for each wage dollar.

The effects of this attitude are plainly visible to the casual observer in the morale of Frisco employees in all departments, at all levels. There appears to be a higher level of interest in the problems and the health of the company, and a greater willingness to put forth real effort to help improve the company's lot. It is a subtle difference in attitude which has become a sort of Frisco hallmark.

When Frisco emerged from the control of the courts at the beginning of 1947, it had a highly centralized organization with practically all authority concentrated in the home office at St. Louis. One of Mr. Hungerford's first decisions was to start working toward greater decentralization—a divisional type organization with greater authority and responsibility at local levels. But the organization simply did not have enough men of a caliber to make good managers. So the first step was to find men to staff the new organization—both by educating and training existing personnel and by bringing in "outsiders."

One effect of a long period of highly centralized management is a lack of suitable candidates for positions of greater responsibility. Younger men with ability and imagination tend to gravitate to those companies offering greater opportunity. In the case of the Frisco, the depredations had been greatest in the operating department; other departments were more successful in retaining a properly staffed and balanced organization.

This situation was not peculiar to the Frisco—other railroads faced similar problems. It was the result of a prolonged period of depression followed by a world-wide conflict when able-bodied men were almost impossible to obtain. Further, steady increases in union wages, without compensating increases being granted to supervisory personnel, rendered most operating department lower-level supervisor jobs—the prime source of candidates for future managers—unattractive: hours were long and the pay low. Further, centralization of management had robbed these positions of whatever authority—and thereby prestige—they had once possessed.

So the problem confronting the new Frisco management was two-fold: (1) Finding men within the organization who could be groomed for advancement, and (2) Training these men to staff a decentralized organization.

Selecting Candidates

Actual selection of individuals for training and advancement is handled by each departmental head under the nominal guidance of C. P. King, vice-president—personnel. There is no formal method for selection and evaluation—though there are certain minimum standards of education, experience, and ability to deal with people. Each department head or supervisor evaluates the personnel of his department and uses his best judgment in the selection of candidates for advancement. He can, however, call on the personnel department for assistance whenever necessary.

Insofar as possible, the organization has been built from within, with candidates for advancement being selected from among existing employees. This kept to a minimum the need to bring men in "from the outside." In building their organizations, all department heads followed a deliberate policy of seeking candidates with definite qualities of leadership. At the same time, working conditions in the lower-level supervisory jobs—particularly in the transportation department—were improved.

Superintendents', trainmasters' and roadmasters' territories have been rearranged, and there has been a deliberate effort to keep the territory to be covered by one man within reasonable travel distance from his headquarters. Pay was increased, hours improved, and prestige restored by returning authority and responsibility.

An outsider touring the railroad is struck by the high morale of Frisco employees at all levels, from the bottom to the top. This is not accidental. In addition to respecting the dignity of the individual and delegating authority to match responsibility, Mr. Hungerford has made it a policy to try to pay his supervisors a little better than the average prevailing in Frisco territory.

Training Equally Important

With such a large number of new men coming into supervisory and "middle management" positions, the need for some training and instruction was obvious. In its approach to this problem, the Frisco's respect for the intelligence and integrity of the individual is again evident. Instead of setting up formalized schools and

rigid instruction programs, each man has been encouraged to improve himself. Visits to other industries and other railroads to learn how similar problems and situations are handled have been encouraged. In other cases, the standard railroad practice of moving selected men through a variety of different jobs is followed.

Typical of the many training methods used by the Frisco is the Safety Department. Like similar organizations in other railroads, this group is concerned with encouraging continuous observance of safe practices. Although some railroads question its "razzle dazzle" methods of selling safety, it obviously works for the Frisco. In recent years the Frisco has had one of the best consistent safety records in the country.

Significant is the way the department is used as a training school through which many transportation department supervisors pass "on their way up." Inasmuch as their Safety Department work includes teaching safety to school children, railroad employees, and the general public at large, they must not only learn the importance of safety and how to teach others to observe it, but the technique of effective leadership and salesmanship.

Training programs of one sort or another are in evidence in practically all departments. Typical are the mechanical department's practice of encouraging key shop foremen to visit other Frisco shops about once a year to see how they handle similar problems and to observe their methods; the courses in public speaking offered to many interested supervisors and other personnel; and the traffic department's periodic sales-training meetings.

Another Frisco development is a seminar currently being held as a "human relations venture, enabling those attending to become better aquainted with the other fellow's job, and to see how their work is integrated with the operation of the railroad as a whole." Held in two week-long sessions, 735 employees of varying rank and from all parts and functions of the railroad attended for two days each. The Crescent Hotel—a large resort hotel at Eureka Springs, Ark.—was completely taken over by the Frisco for the duration of the seminars.

Although it is early to evaluate the eventual result of this effort, it is Mr. Hungerford's hope that it will materially improve lines of communication between various departments, and between different levels and sections within the same department.

The Frisco has also been an active participant in the 13-week "Advanced Management Program" conducted by Harvard University Graduate School of Business (*Railway Age*, April 9, 1951, page 38). To date seven Frisco officers have completed the program, one is currently "at school," and several more are scheduled to participate in subsequent terms.

All-in-all, this training program is not much different in its essentials from those followed by other progressive railroads. Its one unusual feature is its continued faith in, and reliance on, the ability of the individual.

Management by Teamwork

The Frisco is not a "one-man railroad"—nor can it be said to be "run" by a small group of men. To a greater extent than is common within the industry, the actual day-to-day affairs of the railroad are handled and administered by a management team which reaches pretty far down into the organization. This has been accomplished by avoiding concentration of too much responsibility or authority in any one place or one man—instead they have been passed through the organization to the levels nearest where the work is actually being done.

Such decentralization of responsibility and authority requires a great sense of teamwork on the part of all the men in the management group if the railroad is to continue functioning effectively as a unit. Mr. Hungerford has set for himself the task of providing direction and purpose, inspiration and incentive. His is also the task of being sure all channels of communication between various parts and between different levels of his organization are kept open, and that information passes freely in both directions. Without good communications, a decentralized organization soon loses its many advantages.

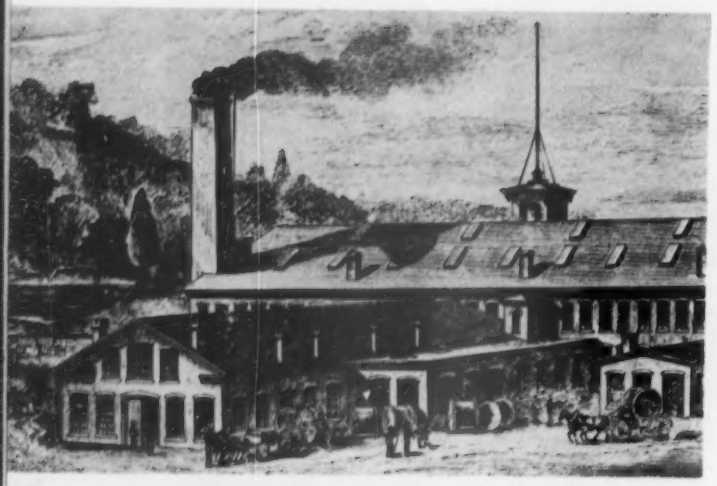
Coupled with the localizing of authority and responsibility are the carefully directed efforts of the Public Relations Department aimed at building dignity and respect for local supervisors and officers. A behind the scenes—but apparently very effective—employee relations program is directed by this department. Although it plans and directs, it is very careful to keep itself in the background, and keep the spotlight on local officers and supervisors.

Management Needs Incentive

The Frisco obviously believes that good management is based on having competent men, interested in their jobs and in the welfare of their company. The program of building and maintaining managerial talent seems to revolve around Mr. Hungerford's personal ability to handle people. There is no fixed policy, but the Frisco does pay better than most of its neighbors—when Mr. Hungerford believes the man to be doing a job worthy of the extra compensation. The top-level management is offered extra incentive in the form of a stock-option plan, though this has been inactive because the stock price fixed by the board of directors is higher than the going market price.

For all of its attention to people, the Frisco has no formal plan for compensating its officers which allows for growth within a job, or holds out incentive to do any given job better. The only way any supervisor or officer can hope to win an increase in pay is by being promoted to another job. This practice is quite conventional within the railroad industry, but has been abandoned by most successful "outside" industries in favor of compensation plans which provide for growth within an individual job.

The true test of the efficacy of the Frisco's system of handling people—particularly those in the middle and upper brackets of management—lies ahead. Decentralization, plus accumulated retirements, made it possible for many young men to move ahead quite rapidly in the last few years, and this undoubtedly has had a beneficial effect on morale. With the new management positions now pretty well filled, and the opportunities for rapid advancement limited to a more-normal replacement level, the question will be whether present policies will continue to maintain high levels of morale and interest.



A WATERMILL on Bladen's brook was the site of the early A. G. Day plant at Seymour, Conn.

1854—1954 Kerite Observes Its Centennial

The Kerite Company of Seymour, Conn., celebrating its 100th anniversary this year, can look back on a century of progress in the manufacture of insulated wire and cable. Today headed by President C. R. R. Harris, the Kerite Company owes its inception to family ties—which included Charles Goodyear, inventor of the process for vulcanizing rubber—and a Connecticut waterfall. Inventor of Kerite insulation was Austin Goodyear Day, the company's founder, a cousin of Charles Goodyear.

Day and the Goodyears

In 1854, Austin Goodyear Day bought a mill on Bladen's Brook in New Haven county, Conn., and a year later founded the A. G. Day Caoutchouc Company, the forerunner of the present (Kerite) company. Day obtained money for the venture, and also valuable association with pioneers in the rubber industry, while working for Charles Goodyear, and his brother, Nelson Goodyear, who patented the manufacture of hard rubber in 1851. The A. G. Day Caoutchouc Company was incorporated with a capital of $75,000 to manufacture vulcanized rubber under the patent of Nelson Goodyear.

But other events, besides the rubber processing inventions of the Goodyears, were to affect the company's development. It was the era of westward expansion, and just a little more than a decade after Samuel F. B. Morse, inventor of the telegraph, sent his first message. In sending future messages, Day's company was to play an important part.

Associated with Day, early in the venture, were his father, two brothers, and Alva Goodrich DeWolfe, an authority on design of machinery for processing rubber. Hard rubber fountain pens and rubber-covered rings for horses' bits were among the company's early products. During the Civil War, Day pioneered in the manufacture of hard-rubber covered cannon balls—hard rubber to prevent damage to the rifling of cannon barrels.

On March 18, 1864, fire destroyed the original A. G. Day Caoutchouc Company factory; the building erected in the following year, is the center of today's Kerite plant at Seymour, Conn.

Kerite Arrives

In the two years after the building of the new plant, an event took place which set the future of Day's company. Sometime in 1866 or 1867 Day succeeded in developing the wire insulating compound which is known as "Kerite."

Ever since installation of the telegraph from Philadelphia to Baltimore in 1846, men associated with Morse's new telegraph had recognized the need for effective wire insulation. Tar and gutta percha, used on the original line, proved inefficient. Simultaneously with Day's inventon, his associate, DeWolfe, perfected a machine for applying Kerite to wire. To the team of Day and DeWolfe goes the credit for the first really successful insulated wire in America.

International recognition came to Day's insulated cable in 1867, when it received two awards at the Universal Exposition in Paris. In the same year, a Yale chemistry professor Benjamin Silliman, wrote to Samuel F. B. Morse, stating that in its ability to resist ozone, Day's cable left little to be desired. A year later, Morse himself wrote to Day, congratulating him on the success of his insulated cable in telegraph use.

From 1867 to the present, the story of Kerite closely parallels the development of communications and signaling systems on railways in America. In 1869, the Western Union Telegraph Company installed Kerite insulated cable under the Chicago river. Kerite helped to make possible one of the nation's first weather stations, in 1870, when it was strung from a railroad station at the base of Mount Washington to the summit. In 1875, when the Brooklyn Bridge was built, Western Union installed Kerite cable along the footwalk over the bridge. Kerite non-leaded submarine cable, installed under the Hudson river in 1883, continued in service without a single failure until 1917.

In 1876, Day's cable received an award at the Philadelphia Centennial Exposition. Here, too, Alexander Graham Bell received awards for his telephone and multiple telegraph instrument.

Brixey and the Future

Three years later, W. R. Brixey, an Englishman who was to play an important role in the future of Day's company, came to Seymour. He married the daughter of A. G. DeWolfe, Day's partner. In 1871, on a trip to England, Day had met and married Brixey's sister,

Sarah Anne Brixey. When Day died in 1889, he left the company to his wife, under Brixey's management. Mrs. Day died three years later leaving Brixey in control of the company.

Under Brixey, the company saw rapid expansion. He changed the name to "W. R. Brixey, Esquire, Manufacturer of Kerite Wire and Cable." There were 25 men on the payroll. The company's main customers in this period were the railroads, Western Union, and the Postal Telegraph Company.

The last three decades of the nineteenth century saw important developments in transportation and communications fields, with which Day's company had become so closely allied. In 1869, the first transcontinental railway was completed. The first automatic block signals were installed in 1870; six years later, the first electric signals were installed. The first commercial telephone exchange was opened at Hartford, Conn., in 1878; Edison established the first electric lighting plant in 1882, in New York.

Kerite Cable in Panama

One of the company's major projects under Brixey was the manufacture of a 50-mile piece of cable to connect the Atlantic and Pacific cables across the Isthmus of Panama, in 1908. Award of this contract to Kerite resulted from tests begun more than forty years before by Professor Silliman of Yale and the U. S. government. In 1867, a length of Kerite insulated cable was laid in the Bay of Aspinwall on the Isthmus of Panama. Later tests showed that Kerite successfully resisted marine borers and the harmful effects of tropical seas. The success of the 1908 cable, which is still in operation, is attested by the fact that Kerite received the contract for a second cable in 1918. The man who supervised the laying of this second cable, C. R. R. Harris, was later to become Kerite's president.

While Austin Goodyear Day supplied the inventive genius which launched the Seymour plant, it is to W. R. Brixey and more particularly his son, Richard D. W. Brixey, that credit must go for expansion and the establishment of a firm financial basis. By 1907, the company had offices at 203 Broadway in New York. When Brixey died in 1911, one of his sons, Richard De Wolfe Brixey, became president and the name was changed to the Kerite Insulated Wire & Cable Co. The younger Brixey's particular interest was Kerite's future development for railroad signaling service. Under him, Kerite became one of the major suppliers of insulated cable for railroad signaling.

C. R. R. Harris, who now heads Kerite, became president following the death of R. D. W. Brixey in 1943. On October 10, 1945, the name of the company was changed to the Kerite Company, as it is known today.

This, then, is the background of the Kerite Company, which Day started a century ago. The small watermill on Bladen's brook at Seymour was replaced by more modern buildings and gradually expanded. Now, at the same location, is a factory equipped with modern machines and instruments for the manufacture and testing of insulated wires and cables. Today, Kerite employs nearly 600 people, and has offices in five major cities, New York, Chicago, San Francisco, Los Angeles and Boston.

Benchmarks and Yardsticks

A RAILROADER AT LAKE CHARLES, LA. —W. G. White of the Kansas City Southern—writes us on the subject of "the railroads' fight for survival" (this apt label, as we recall, being that of Monon's Warren Brown). Mr. White is worried to see the kind of commodities that are getting long-hauled over the highways; and he attributes much of the diversion of traffic away from the rails to unsatisfactory handling.

Placards on bulletin boards, preaching careful handling, he does not consider to be very effective. Personal safety practices—taught with heavy emphasis on physical injury—he believes should be inculcated by other methods, and not so exclusively by this one.

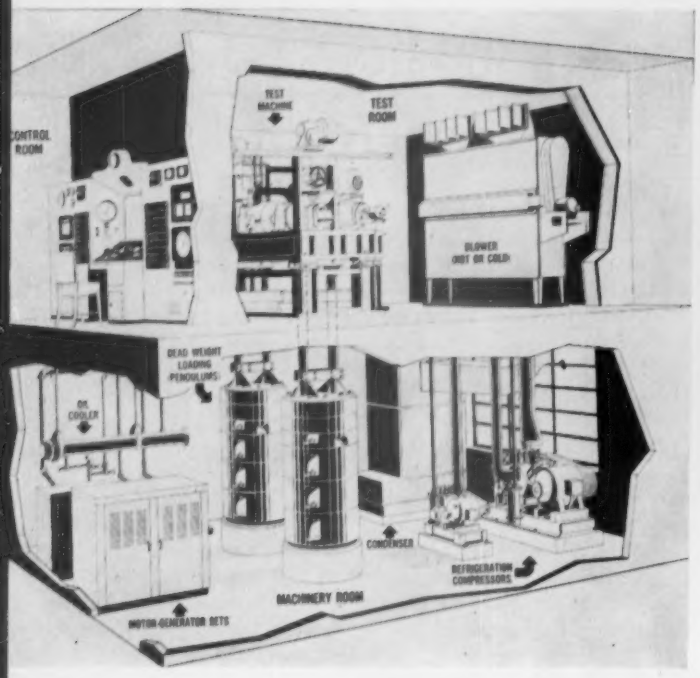
The shippers and receivers of freight are buying transportation service—which means that they expect two things: (1) delivery of the goods on schedule and (2) receipt of shipments intact and undamaged. Mr. White points out that, as a consumer, the railroad man expects the merchant from whom he purchases goods to deliver them when promised, and in a condition fit for use. The merchant can't give this kind of service to his customers unless he first gets it from the transportation agency which brings the freight in; and unless the merchant selects a transportation agency that gives him this kind of service, he will lose his customers, including railroad men themselves.

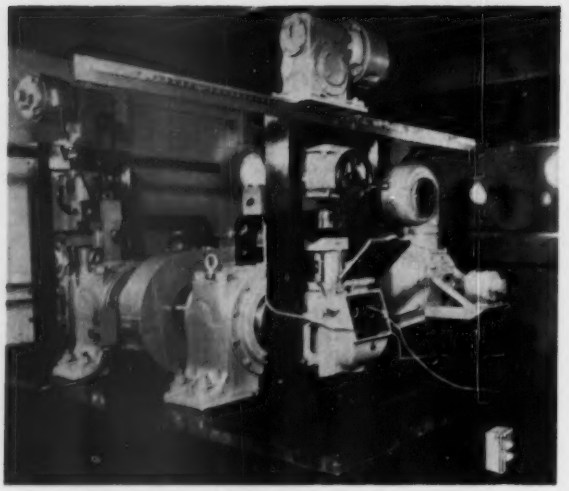
Mr. White believes that "a lot of employees take railroad traffic for granted . . . and it is up to the supervisors to teach them differently. When discipline is necessary, supervisors should get tough and dish it out to those who deserve it. We have got to stop this switch of traffic away from the rails." Continuing, he goes on to say:

"I firmly believe that, when an employee is properly taught his part of the job and is shown how rough handling drives the business to other forms of transportation, we'll quit getting these long reports of loss and damage; and our railroad jobs will become more secure. But it will all have to start with the supervisors' getting tough."

There cannot be any argument that there is no security for anybody in dissatisfied customers —and that railroad men have a selfish interest, not only in their own satisfactory peformance, but in that of all other railroad men and all railroads. Do our readers agree with Mr. White that really exacting supervision is a primary requirement?

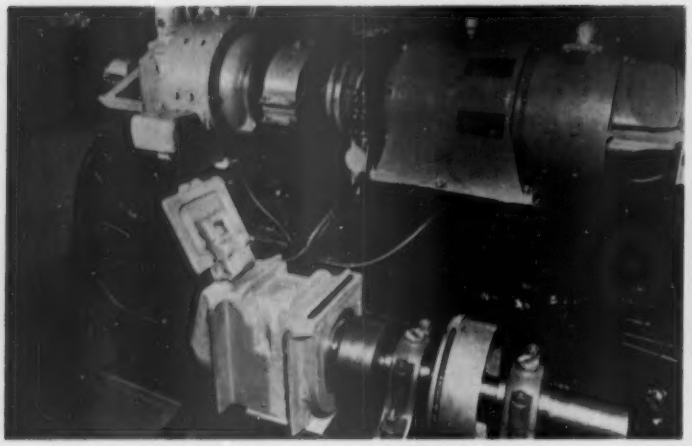
Railroading is unique, in that no one company, by itself, can assure good service to customers. Railroad men must be pardoned if they take great interest in other railroads' performance—because it is the result of service by the industry as a whole that counts with the customer—not just the service of one railroad. J. G. L.



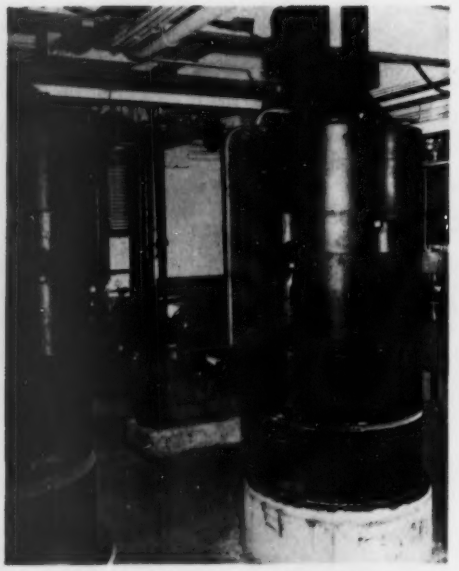


THE TEST STAND in the test room. The test axle rotates in solid main support bearings. Load is applied to the journal boxes by pendulum yokes with weights at the lower ends in the machinery room immediately below the test room. The pendulums swing freely about the axle journals. Torque is measured by pendulum angle. Motors at the tops of the yokes are for applying and removing the weight of the pendulums from the journal boxes.

Laboratory for Intensive Journal-

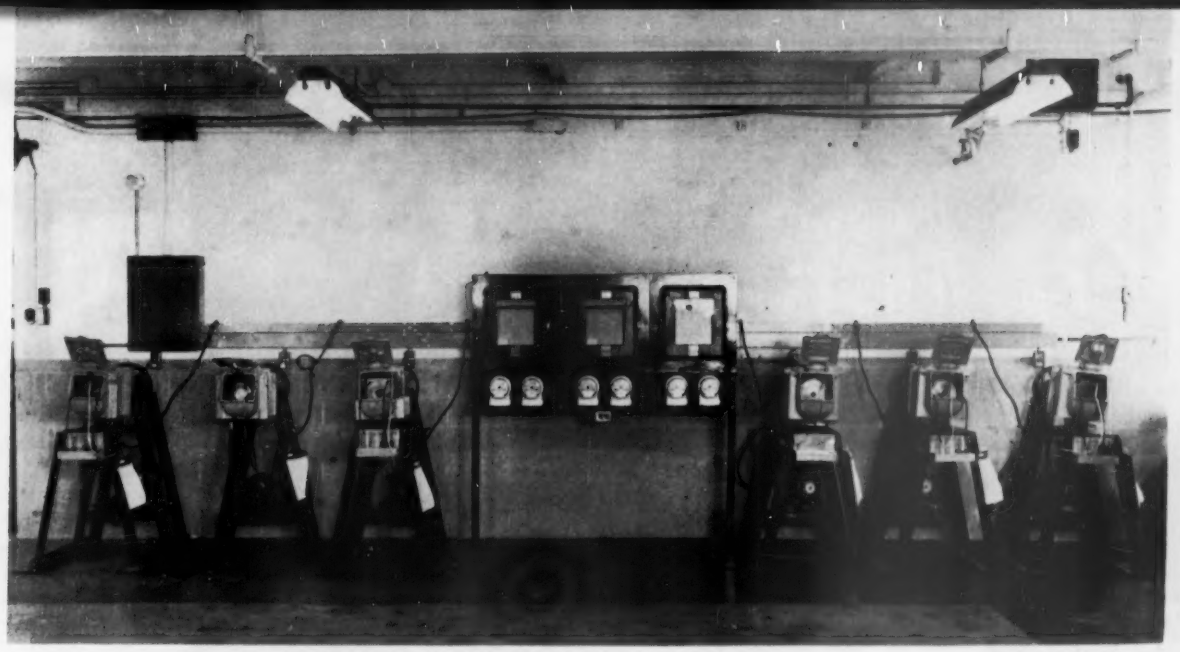


REAR OF THE TEST STAND. The 60-hp motor at the left is coupled to the 5-hp motor at the right through a magnetic clutch. The small motor runs the test axle up to 6 mph; the big motor takes it to 115 mph. In the foreground is a no-load test stand.



ABOVE—The lower ends of the deadweight loading pendulums in the machinery room. Sections of these pendulums can be detached to reduce the load from full to three-quarters, one-half, and one-quarter load. In the background are large and small compressors for refrigerating the test room.

◀ LEFT—The operator in the control room looks through a Thermopane window into the test room where the attendant is clothed for protection against temperatures which can be maintained as low as —40 F. Top limit is 125 F. In front of the operator are test machinery controls.



STANDS FOR PRELIMINARY TESTING of lubricating materials and devices without load on the journals. The instrument panel mounts six watt-hour meters at the bottom to measure power consumption and three two-point continuous temperature recording instruments. Journal speeds are equivalent to train speeds from 40 to 85 mph. In the room with these stands is a special machine for testing the bond strength of journal-bearing lining.

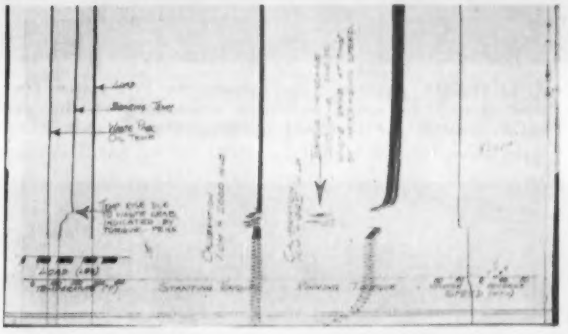
Bearing Research

The American Brake Shoe Company during 1953 completed an addition to its Sargent Research Laboratory at the company's research center at Mahwah, N. J. This adds facilities for the study of journal-bearing and journal lubrication problems to those already available for research on brake shoes, wheels and track work.

It was in the railroad field that Brake Shoe's reputation for research was first established. Since 1933, however, the facilities at the Mahwah research center have been expanded to include metallurgical and chemical laboratories and an experimental foundry. These facilities are used in research on metallurgical problems pertaining to automotive power transmission and braking, and on the development of automotive type brake and clutch linings.

The experimental foundry deals with all phases of foundry practice and equipment both for steel and iron. It participated in the development of a cast-steel car wheel which has been in service test for more than seven years and has run more than 3,500,000 test car-miles without a failure. From the track-work division has come a new tie-plate fastener which partially replaces the standard track spike and reduces the excessive wear of railroad ties caused by motion of the plate on the tie.

The new bearing laboratory, designed by Brake Shoe, cost approximately $250,000. The building has two floors. The major facilities are in the test room and in two other rooms directly associated with it. One of these is the control room where all of the operating and indicating devices are located. The machinery room is directly below the test room. The illustrations show the laboratory facilities and how they are used.



TYPICAL SECTION from a chart record. The effects of a waste grab on torque and bearing temperature are clearly shown. Chart speed can be set from 0.025 to 50 millimeters per second.

A REPLACEABLE AXLE STUB used on the journal-bearing test stand. The journal (left) is tapered to fit over the stub and is held on with the cap and three bolts. The journal, if tested to destruction, can be easily replaced.

TELEVISION enables train director in Pitt tower (bottom arrow) to watch switching operations at the post office behind the terminal building (top arrow)

TV CAMERA sees this picture and transmits it over coaxial cable to TV set screen in tower

TRAIN DIRECTOR sees switching operations on TV set screen on his desk, 2,000 ft from the post office

TV CAMERA at PH tower is focused on the stub-end sidings that run into the basement of the post office

What Goes on Here . . .

Can Be Seen Here as . . .

TV Keeps Eye on Switching

The Pennsylvania has installed an industrial television system in the Pittsburgh, Pa., terminal area, enabling the train director at Pitt tower to watch switching operations at the post office, which is out of sight behind the passenger terminal building. A TV camera is focused on the four spur tracks running into the basement of the post office. This camera picks up the "image" of the switcher and tracks, and transmits it over a coaxial cable to be reproduced on the screen of a TV set on the train director's desk in Pitt tower.

About 100 mail cars are switched daily, and these moves require the switcher to enter the main tracks up to 150 times daily. Because the director can see the switcher at work, he can more effectively plan train movements.

In 1948, the Pennsylvania began planning for the consolidation of five interlockings in the Pittsburgh terminal area, all of them to be controlled from Pitt tower. PH tower, which is between the post office and the terminal building, has directed movements over the four stub-end sidings and their connections to the adjacent main tracks. With the consolidation, PH tower is to be removed. PRR engineers feared that with transfer of its controls to Pitt tower a "bottleneck" would be created, in that the Pitt tower operator would not be able to retain the close control over post office switching moves which the PH operator's situation permitted.

The solution, PRR engineers decided, was to install a TV camera near the post office to watch operations, with a receiver on the train director's desk where he could view, on a screen, what was going on. At present the TV camera is set up in PH tower and focused on the four spur tracks.

The TV circuit augments the track-occupancy lights on the interlocking control machine board, in that TV can show the director when the switcher has a cut of mail cars, is uncoupled from them, or is moving toward or away from the main track connections.

The TV system is in experimental operation now, during construction in the terminal area, but when PH tower is removed, the camera will be permanently mounted on the trainshed roof, and lighting will be installed for night operations. The equipment is model 300B Utiliscope manufactured by the Diamond Power Specialty Corporation, Lancaster, Ohio. The camera and associated power supply require 100 watts, and the receiver (TV set) uses 125 watts of 115-volt, 60-cycle a-c power.

A. M. Crawford, superintendent of telegraph and signals, says: "For many years, at interlockings and power switches, we have had a mechanical substitute for the human mind and hand. Now, through TV, we have a substitute for the human eye. We're just cracking the ice on its (TV) potentialities to improve PRR service."

French Test Train Runs 151 MPH

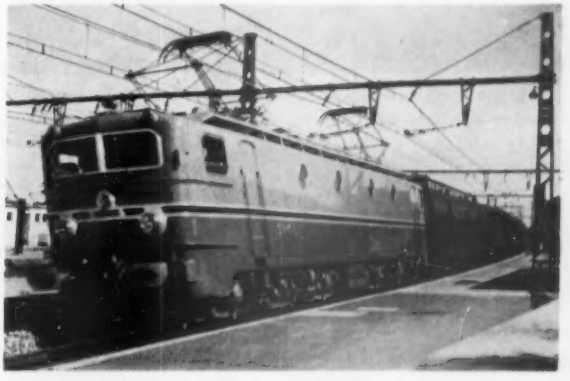
To determine performance characteristics of passenger trains operating at speeds above the authorized 87 mph maximum, French National Railroads engineers have conducted a series of high-speed tests.

The tests were made between Dijon and Beaune, a distance of 23 miles. This section is largely tangent track with a few wide curves. The rail weight is 99 lb.

The electric locomotive used has a C-C wheel arrangement and weighs 118 U.S. tons. For the tests it was attached to three passenger cars weighing 40.7 tons each.

In the series of tests the maximum speeds were increased in five increments from 99.4 to 151 mph. Truck-mounted recording devices were used to measure lateral forces against the rail. The accepted maximum lateral force that this track can bear with this locomotive is about 14,500 lb.

The maximum lateral force developed on tangent track was 9,500 lb. This occurred at 147.1 mph and was caused by the third axle of the leading locomotive truck. A lateral force of 14,300 lb was recorded on a 0.5 deg curve at 124.3 mph. This was the maximum speed run on any of the curved track.



TEST TRAIN on one of its high-speed runs.

The engineers report that both locomotive and car performance was highly satisfactory and that no trouble was experienced with pantographs. While no increase of regular operating speeds is now contemplated, the tests served to show for specific pieces of equipment the latitude between the normal speed and the maximum speed possible.

P. D. Brentlinger (PRR), president of the association, addressing the opening session.

I. C. Miller (T. J. Moss Tie Company) is the new president of the AWPA.

TIMBER TREATERS TOLD . . .

Wood Tie Is Holding Its Own

AWPA convention hears facts about longer life now being secured — Addresses and reports bring out new developments in wood preservation

The treated wood tie "has been a consistently good partner" in the struggle of the railroad track maintenance engineer to keep "structures safe and the costs low." This statement was made by S. R. Hursh, chief engineer of the Pennsylvania, in an address to the fiftieth annual meeting of the American Wood-Preservers' Association, held at Atlantic City, N. J., April 26-28. "Competitors of the wood tie," he continued, "must develop something vey much better than we have seen to date in this country under our present economy of high wages and the reasonable availability of hardwood for ties."

Addresses and committee reports emphasized the fact that, through the development of more effective methods of wood preservation, efforts are continuing not only to get longer life from species of wood commonly used on the railroads, notably for crossties, but to make it economically possible to use species not heretofore considered entirely suitable. The continuing need on the part of the railroads to promote policies and practices designed to lengthen the life of wood products was reflected in the usual large attendance of railroad men, some of whom participated as chairmen of technical committees and as session chairmen and coordinators.

Getting 30 Years' Life

Mr. Hursh spoke on "The Future of the Wood Tie in Railroad Maintenance and the Contribution of the Tie Treating Industry to Prolonging Its Life." He reviewed the decline in annual tie renewals on the Pennsylvania, made possible largely by preservative treatment and by improvements in techniques of treatment. In the years 1903 to 1908, inclusive, when all ties installed were untreated, the road inserted an average of 4.87 million ties annually. Since 1950 installations have varied "around the 1.85 million tie mark, depending on how much new rail is laid." "On the basis of our total installation of 61.25 million treated wood ties," he said, "and a renewal of about two million ties annually it gives us an average life of the tie of over 30 years."

Commenting on the road's experience with substituted ties Mr. Hursh declared that the Pennsylvania had been a veritable "trial horse" for tryouts and testing new methods and new or improved products. The concrete tie "has been the most persistent competitor of the treated wood tie," he explained; the PRR some 30 years ago installed over 20,000 concrete ties, costing at that time about $6.00 each. Of these only about 3,500 are still in service, mostly in yard tracks. There was considerable cracking of these ties between the rails, while others "tilted or rolled and were hard to keep in surface." The road has not installed any concrete ties since 1928.

On the basis of revised designs for concrete ties using the prestressed theory "we are having a wide renewed interest in the concrete tie. The former inadequacies were studied, also a more efficient use of materials, reduction of size and lowering of weight. The improvement of these features has developed a tie now being used in France. Mexico is also installing some. An analysis shows that in the United States these ties would be very expensive and could only be justified by long life."

As for the wood tie, Mr. Hursh said that the railroads

A. D. Chapman (Chapman Chemical Company) and G. W. Kuehn (American Creosoting Co.).

Charles Bernuth, (Bernuth, Lembeke Co., Inc.) and J. S. Giddings (Santa Fe).

are adding years of life to it by using heavier rails and larger tie plates. The wood preserving industry is also constantly working for the production of a better tie, he said, while the preservative manufacturers, "using the best known practices for quality control and cooperating with the research laboratories," have likewise added much to prolonging the service life of the wood tie.

Oregon Woods for Crossties

Among the efforts being made to determine the suitability of so-called secondary species of wood for crossties to supplement the commonly used species is a cooperative project undertaken by the Oregon Forest Products Laboratory and the Southern Pacific. The purpose of this project, as described in a paper by Robert D. Graham of the laboratory, was to determine the suitability of various Oregon woods for crossties and to obtain information on their air seasoning and preservative treating characteristics. The species studied included incense cedar, Douglas fir, Shasta red fir, white fir, western hemlock, lodgepole pine, ponderosa pine and Sitka spruce. Crossties of these species were obtained from areas of possible future sources of supply, air seasoned, and then treated with a creosote-petroleum solution in preparation for test-track installation to determine their wearability.

Mr. Graham reported that all of the species were seasoned without the development of serious defects. "There was a marked decrease in the number of select ties but only a slight increase in the amount of No. 2 ties as a result of seasoning." The treating schedules, with maximum pressures of 100 to 140 psi, had no visible adverse effect on the various species. All the ties, except for one charge of lodgepole pine, were incised. Penetration was better in ties treated by the Rueping process, while retention was much higher with the Lowry process. However, the Rueping-treated ties bled severely whereas the Lowry-treated ties bled very little.

The penetration-retention results, according to Mr. Graham, were fairly satisfactory. However retention of

W. A. Stacey, Ralph H. Mann and W. D. Keeney (all AWPA Service Bureau).

A. L. Lynch (Texas Creosoting Company) and H. L. Holderman (Bird Tie Pads).

Roy M. Edmonds (Ry. Tie Assn.), W. E. Gadd (American Creosoting Co.) and Roy Lumpkin (Rock Island).

the Shasta red fir ties was low and penetration erratic.

A project to develop a method of air-seasoning wood under controlled conditions was described in an address by J. A. Vaughan, director of research, Southern Wood Preserving Company. The project was undertaken with the objective of developing a process of controlled seasoning that would overcome the disadvantages of air seasoning. In this connection Mr. Vaughan observed that it has been the practice for many years to air-season hardwood crossties and switch ties. Although this method is highly satisfactory for species such as the oaks, he said, it has been considered by many to be hazardous in the case of the gums and, in some instances, the pines. Some of the best gum- and pine-producing territories are those where seasoning conditions are frequently adverse to full air-seasoning without the danger of decay, he explained.

Difficulties encountered in attempts to develop a satisfactory method of controlled seasoning led to the design of a completely new type of drying unit in order to take advantage of process controls not easily adaptable to conventional dry kilns. "Repeated research and experimentation finally led us to our current Controlled Air-Seasoning process and units, the operation of which has practically no resemblance to dry-kiln operation." Mr. Vaughan said that the "units have now become fully commercial in our operations," and that two are being employed for crossties exclusively.

The schedules that thus far have proved satisfactory for drying green wood to treating condition are as follows: Southern pine poles and timber, 8 to 10 days to 40 per cent; gum crossties and switch ties, 16 to 20 days to 50 per cent; and Southern pine lumber from 3 to 5 in. thick, 16 to 18 days to 20 per cent.

Advantages of the new process over natural air-seasoning were given as follows: (1) assurance of material dried to treating or specified moisture condition without the danger of decay; (2) production of seasoned material without the necessity of large inventories; and (3) maintenance of production schedules independent of weather conditions at the plant location.

Reports of the various technical committees of the association presented recommendations and other material of interest to railroad users of treated wood. The report of committee P-1, Preservatives, Revision of Manual, called attention to its report last year that the salt preservatives, zinc chloride and zinc meta arsenite, were no longer being used and should be deleted from the Manual, and recommended that they now be deleted. The committee also recommended that the trade name "Wolman Salts" be placed in parentheses after the preservative, tanalith.

Another preservatives committee (P-2, Creosote and Creosote-Coal Tar Solutions) recommended that a tentative revision of the standard for cresoste-coal tar solutions, presented in 1953, be confirmed, and also recommended the adoption of a revised standard for creosote for the brush or spray treatment. This specification had been adopted as tentative last year. Committee P-4, New Preservatives, offered for adoption as a full standard a specification for determining pentachlorophenol concentrations in either oil or wood, accepted as tentative last year.

Treatment Committee T-2 (Pines, Southern, Jack, Ponderosa, Lodgepole and Norway) reported on its studies of the desirability of specifying in the treatment standards a maximum storage life before installation for poles and piles without retreatment. The committee noted that no formal data have been offered to the association tying in long-time storage with early failure of poles or piles, but said there is some evidence that the poor showing of specific lots of poles can be attributed to long-time storage prior to installation. The committee's opinion is that considerable data must be procured before definite conclusions can be reached. This committee also recommended that the inclusion of pentachlorophenol solution in the treatment standard for Southern pine poles be raised from a tentative to a full standard. Tentative specifications for the treatment of ponderosa pine, jack pine, red pine, and lodgepole pines with various pentachlorophenol solutions were also offered by the Treatment Committee.

The committee recommendations here mentioned were approved.

All sessions of the convention were under the general supervision of P. D. Brentlinger, president of the association. Mr. Brentlinger is forester of the Pennsylvania.

Election of Officers

In the election of officers I. C. Miller, vice-president, T. J. Moss Tie Company, St. Louis, was advanced from first vice-president to president; B. D. Howe, chief tie and lumber inspector, Louisville & Nashville, Louisville, Ky., was elected first vice-president; and N. E. Kittell, Joslyn Manufacturing & Supply Co., Franklin Park, Ill., was advanced from director to second vice-president. Newly elected members of the Executive Committee are G. Q. Lumsden, timber products engineer, Bell Telephone Laboratories, Murray Hill, N. J.; Paul Wayman, vice-president, American Lumber & Treating Co., Chicago; and W. W. Barger, inspecting chemist, treating plants department, Santa Fe, Chicago. W. A. Penrose was re-elected secretary-treasurer.

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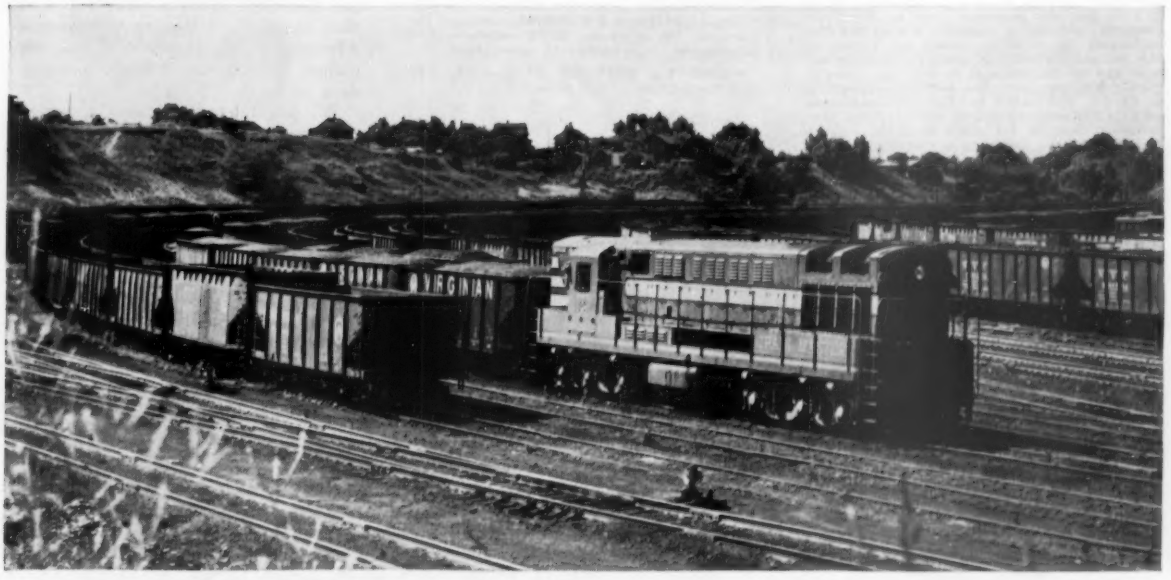

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Education

A.U. Plans 7th Foreign Transportation Institute

The seventh Foreign Transportation Institute of American University, Washington, D.C., will be held May 11-28.

The director will be Dr. L. M. Homberger, professor of transportation at the university. Lectures will include discussions of "Railroad Foreign Freight Traffic," by Richard M. Cornell, the New York Central's general agent at Washington; and "Railroad Facilities at Ports," by E. P. Miller, manager of port traffic, Car Service Division, Association of American Railroads.

Securities

Authorizations

CENTRAL OF NEW JERSEY.—To assume liability for $1,815,000 of equipment trust certificates, to finance in part seven diesel units and four self-propelled passenger cars costing an estimated $2,280,370 *(Railway Age,* March 15, page 74). The diesel units wil be built by Fairbanks, Morse & Co., and the passenger cars by the Budd Company. Division 4 approved sale of the CNJ certificates for 99.4026, based on interest of 3⅛ per cent, which will make the average annual cost of the proceeds to the road approximately 3.24 per cent,. The certificates, dated as of April 1, will mature in 15 anunal installments of $121,000 each, beginning April 1, 1955. They were reoffered to the public at prices yielding from 2 to 3.25%, according to maturity.

CHICAGO & EASTERN ILLINOIS.—To pledge, as needed, up to $1,244,000 of first mortgage bonds as security for short-term notes. The notes would be issued from time to time over the next three years to provide cash for meeting equipment obligations.

DONORA SOUTHERN.—To issue an unsecured promissory note of $745,900 to the United States Steel Corporation, proceeds from which will refund existing notes (totaling $477,500), increase working capital and make possible completion of rehabilitation work costing $141,300. The new note will carry a 4 per cent interest rate, but will be on an "if earned" basis *(Railway Age,* March 8, page 80). The rehabilitation work includes replacement of rail and fastenings and installation of locomotive sanding facilities.

DURHAM & SOUTHERN.—To issue a $300,000 note to the Fidelity Bank, Durham, N. C., to finance in part acquisition of three diesel switchers *(Railway Age,* March 22, page 18). The note, with interest at 4%, will mature in semiannual installments over a 10-year period.

GULF, COLORADO & SANTA FE.—To issue $46,659,000 in general income mortgage 6 per cent bonds, for delivery to the Santa Fe in satisfaction of a like amount of bonds due July 1, 1953. The new bonds will be pledged under the Santa Fe's general and adjustment mortgages, and interest will be payable if earned *(Railway Age,* January 25, page 17). The GC&SF is a wholly owned subsidiary of Santa Fe.

ILLINOIS CENTRAL.—To assume liability for $6,300,000 of series "39" equipment trust certificates to finance in part 1,500 freight cars costing an estimated $8,700,000 *(Railway Age,* March 15, page 74). Division 4 approved sale of the certificates at 99.4179, with a 2½ per cent interest rate—the bid of Halsey, Stuart & Co. and 11 associates, which will make the average annual cost of the proceeds to the road about 2.59 per cent. The certificates, dated April 1, will mature in 30 semiannual installments of $210,000 each, beginnng October 1, 1954. They were reoffered to the public at prices yielding from 1.25 to 2.7%, according to maturity.

PANHANDLE & SANTA FE.—To issue $20,984,000 of general income mortgage 6 per cent bonds, to be delivered to the Santa Fe in satisfaction of a like amount of bonds held by that company. A portion of the old bonds fell due in 1953, and the remainder will mature in 1958. The P&SF is a wholly owned subsidiary of Santa Fe, and the new 6 per cent bonds will be pledged under the Santa Fe's general and adjustment mortgages.

PITTSBURGH & WEST VIRGINIA.—To issue and sell $7,500,000 of series A first mortgage bonds proceeds from which will be used to help retire $8,749,000 in bonds now held by the public. Additional funds for paying off these bonds will be obtained by refunding existing equipment obligations, adding equipment which is free of lien in order to obtain cash *(Railway Age,* February 22, page 77).

The new series A bonds will bear interest at 3⅞ per cent, and will mature March 1, 1984. Winning bid for the issue was by Kidder, Peabody & Co. and White, Weld & Co., on behalf of themselves and five associates. The bonds were reoffered to the public at 99.56.

TEXAS & PACIFIC.—To assume liability for $1,240,000 of series "O" equipment trust certificates to finance in part 250 box cars costing an estimated $1,700,000 *(Railway Age,* March 22, page 16). Division 4 approved sale of the certificates at 98.484, with a 2 per cent interest rate—the bid of the First National Bank of Dallas on its own behalf and on behalf of the El Paso National Bank and Fort Worth National Bank. This will make the average annual cost to the road about 2.23 per cent. The certificates, dated April 15, will mature in 10 annual installments of $124,000 each, beginning April 15, 1955. They were not reoffered to the public.

Dividends Declared

ATLANTIC COAST LINE.—$1.25, quarterly, payable June 11 to holders of record May 14.

BANGOR & AROOSTOOK.—5% preferred, $1.25, quarterly, payable July 1 to holders of record June 4.

CLEVELAND & PITTSBURGH.—4% special guaranteed, 50¢, quarterly; 7% guaranteed, 87½¢, quarterly; both payable June 1 ot holders of record May 10.

DALLAS RAILWAY & TERMINAL.—common, 35¢, quarterly; 7% preferred, $1.75, quarterly; both payable May 1 to holders of record April 14.

PIEDMONT & NORTHERN.—$1, quarterly, payable April 20 to holders of record April 5.

Security Price Averages

	April 27	Prev. Week	Last Year
Average price of 20 representative railway stocks	61.69	61.69	64.06
Average price of 20 representative railway bonds	94.31	94.88	91.81

Equipment & Supplies

FREIGHT CARS

The **Transportation Corps** has received bids for construction of 825 40-ton box cars and 365 40-ton gondola cars. Also, bids will be submitted to the corps in May for construction of 50 40-ton side-clearing hopper cars. All the cars are to be for foreign service.

LOCOMOTIVES

The **Maine Central** has ordered four 1,000-hp diesel switching units from the American Locomotive Company at a cost of $103,454 each. Delivery is scheduled for next September.

PASSENGER CARS

The **New York Central** plans to request bids for construction of air-conditioned multiple-unit coaches on two bases: For a lot of 50 cars and a lot of 100 cars. The cars would be similar to 100 air-conditioned coaches acquired by the road in 1950 *(Railway Age,* August 5, 1950, page 47), and would go into commuter service in the New York suburban area.

The **Railway Express Agency** is inquiring for 300 to 600 50-ton refrigerator cars for passenger-train service.

Railway Officers

BANGOR & AROOSTOOK.—W. Jerome Strout, general manager—operations, has been elected vice-president—operations and maintenance at Bangor, Me. **Raymond W. Dow,** assistant general manager, has been appointed assistant vice-president — operations and maintenance.

Arthur W. Defenderfer, Jr., traffic analyst since July 1951, has left the B&A to accept a position with Acme Fast Freight, Inc.

CANADIAN NATIONAL. — Wilbur G. Boyd, solicitor at Winnipeg, has been appointed associate commission counsel at Montreal, succeeding **Alexander H. Hart,** who has been named special assistant to vice-president of traffic.

W. J. Morton, general supervisor of services, sleeping, dining and parlor car department, has been named assistant general manager of that department. **E. T. Catrano** succeeds Mr. Morton as general supervisor of services.

CHICAGO & NORTH WESTERN.—Harvey B. Buchholz, general agent at Milwaukee, has been promoted to general freight and passenger agent there, succeeding **W. H. Kreiling,** retired. Named as assistant general passenger agent at the same point is **George G. MacCarthy,** general agent.

EAST JERSEY RR & TERMINAL.—Roy B. Quackenbush, vice-president at New York, has been elected president, succeeding **Reynold M. Kress,** retired. **Arthur L. Smith,** assistant treasurer, succeeds Mr. Quackenbush as vice-president.

KANSAS, OKLAHOMA & GULF — MIDLAND VALLEY — OKLAHOMA CITY-ADA-ATOKA.—R. L. Lomax has been elected president, to succeed **C. E. Ingersoll,** who becomes chairman.

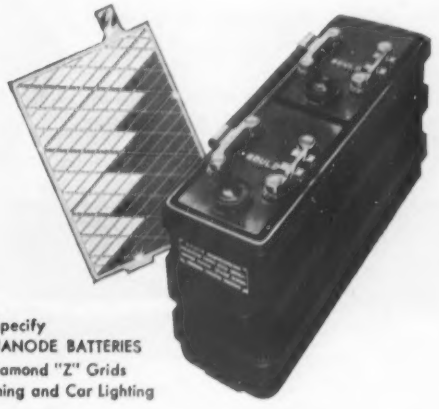
MISSOURI-KANSAS-TEXAS. — Glen O. Prideaux, traveling car inspector, has been appointed superintendent car department at Denison, Tex., succeeding **J. R. Hayden,** retired.

D. R. Miller has been appointed

TIRELESS ACTION

THANKS TO BATTERY POWER!

Tireless action—that's what your air conditioning and lighting batteries have got to give you to keep up with today's increased current requirements. That's what you get when you standardize on new Gould Kathanode Batteries with Diamond "Z" Grids. Extra reserve, extra performance, extra stamina are built into these batteries to provide passenger comfort around the clock. There's no power like battery power—no battery power like *Gould* power.



Specify
GOULD KATHANODE BATTERIES
with New Diamond "Z" Grids
for Air Conditioning and Car Lighting

GOULD *RAILROAD BATTERIES*

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries

assistant general freight and passenger agent at Oklahoma City, succeeding the late **W. A. Springall.** Named as division freight and passenger agent at Parsons, Kan., is **J. F. Coghlan, Jr.** The position of assistant general freight and passenger agent at Parsons, formerly held by Mr. Miller, has been abolished.

MONON.—**John Stewart,** assistant treasurer, has been elected treasurer, at Chicago. Named as secretary there is **Albert S. Long, Jr.,** general attorney, who will continue also in that capacity.

NEW YORK CENTRAL.—**G. S. Wooding,** assistant division engineer at Albany, has been appointed division engineer of the Erie (Pa.) division, succeeding **C. C. Herrick,** who has been transferred to the Cleveland division, to replace **L. W. Moss,** transferred.

PENNSYLVANIA.—**Robert E. Blosser,** assistant division superintendent at Indianapolis, has been promoted to division superintendent at Cincinnati, succeeding **A. Mosby Harris,** who has been transferred to Columbus, Ohio, to replace **William H. Mapp,** whose appointment as general manager and traffic manager of the Pennsylvania-Reading Seashore

Robert E. Blosser

Lines at Camden, N.J., was reported in *Railway Age* April 5.

Robert H. Bierma, assistant general counsel at Chicago, has been promoted to general attorney at that point, succeeding **Theodore Schmidt,** who retired March 31.

Jesse P. Walton, engineer of bridges and buildings at Chicago, has retired.

A. S. Barr, assistant division engineer at Buffalo, N.Y., has been promoted to division engineer at Cincinnati, to succeed **Norman Olsen,** transferred to Fort Wayne, Ind., to replace **R. W. Riser.** Named as supervisor—telegraph and signals at Cincinnati is **Edmund Lynch, Jr.,** assistant trainmaster, who succeeds **W. C. Brosha.**

ROCK ISLAND.—**Paul P. Christensen,** division passenger agent at Chicago, has been named assistant to passenger traffic manager there.

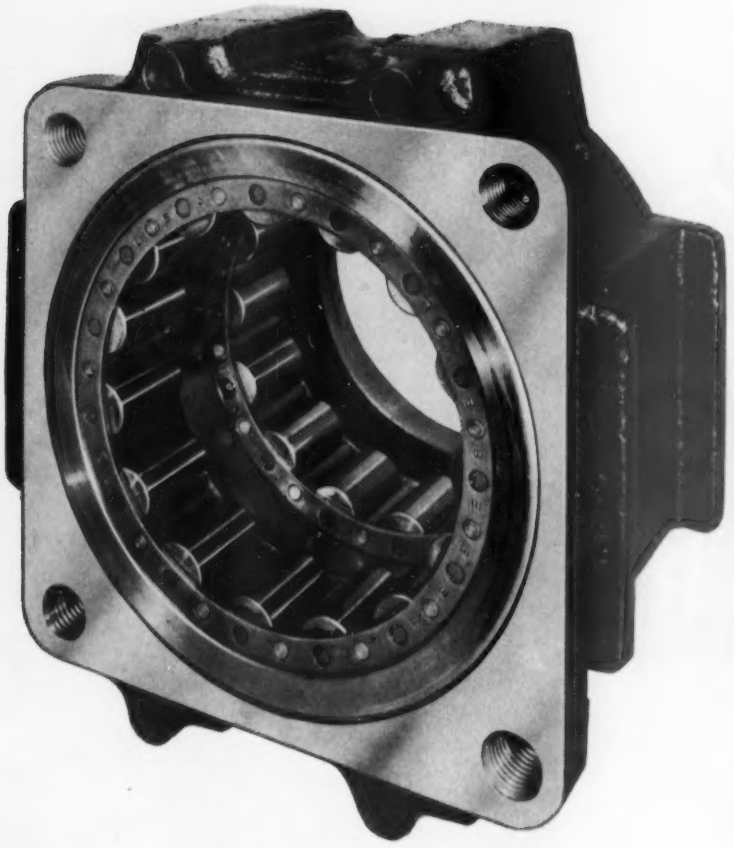
C. P. Varney, executive representative on the president's staff at St. Louis, has retired. **R. B. Smith,** superintendent transportation at Chicago, has been named assistant to operating vice-president at that point, succeeding the late **H. R. Tinklepaugh.**

R. E. Johnson, assistant vice-president—operations, has been elected vice-president—operations, to succeed **D. B. Jenks,** who remains executive vice-president. A sketch of Mr. Johnson's railway career appeared in *Railway Age* September 28, 1953.

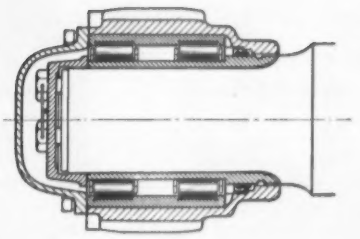
Guy D. Larrabee, assistant to president of the Minneapolis & St. Louis, at Minneapolis, has been named assistant to general freight traffic manager of the Rock Island at Chicago.

OBITUARY

R. E. Mattson, general superintendent transportation of the **Northern Pacific,** at St. Paul, was killed in an airplane accident at Singapore March 13.



This is the Bower-Franklin Roller-bearing journal box for freight cars



The straight roller bearings for this freight car journal box are made by the Bower Roller Bearing Company of Detroit. The inner race fits standard AAR roller bearing axles. Two rows of straight rolls, running between the inner and outer races are positioned by a sturdy retainer. The one-piece outer race is contained in a separate, ruggedly built journal box housing. The bearing permits free lateral movement of the axle up to ½ inch.

Another point to remember about Bower Franklin bearings is that they permit bearing interchange with minimum parts inventory. Complete box and bearing units slip off the axle without disturbing the inner race. No need to carry spare wheel sets with bearings and boxes applied. Ask us to send you complete facts today.

FRANKLIN BALMAR CORPORATION

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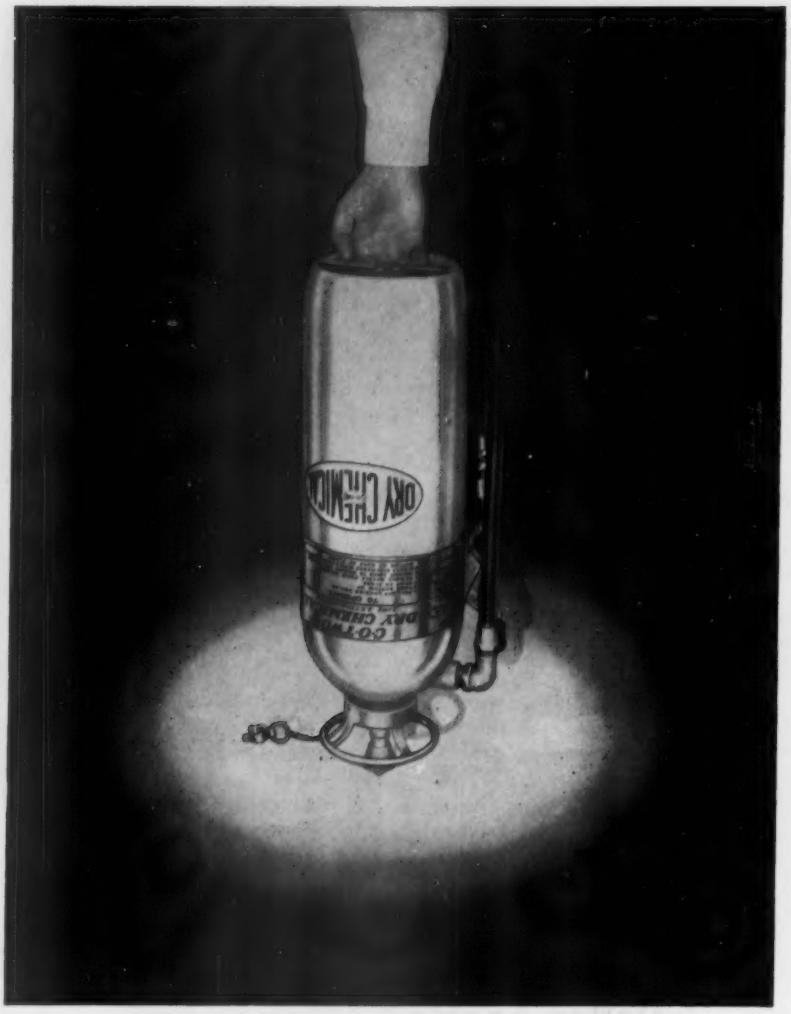
WOODBERRY, BALTIMORE 11, MARYLAND
CHICAGO OFFICE: 5001 North Wolcott Ave., Chicago 40

Bump that assures positive results



When fire strikes, seconds count . . . your fire extinguishers must be the right type and function properly from the very start . . . failure means serious losses.

The growing popularity of the highly effective powdered dry chemical fire extinguishing agent may be hampered by a drawback . . . settling or packing can occur after a lapse of time. However, with C-O-TWO Dry Chemical Type Fire Extinguishers there's no chance of this happening.

The exclusive inverting and bumping design of C-O-TWO Dry Chemical Type Fire Extinguishers provides mechanical breakage of the dry chemical by shifting its position in the cylinder. This outstanding mechanical breakage, plus continuous inert gas pressured agitation or fluffing of the skillfully blended free flowing dry chemical, guarantee lasting, foolproof fire protection.

No other brand on the market today gives you this extra margin for positive results. Inverting and bumping is only one of many unique design advantages that make C-O-TWO Dry Chemical Type Fire Extinguishers your best buy for killing flammable liquid and electrical fires, as well as surface fires involving ordinary combustible materials.

With C-O-TWO Dry Chemical Type Fire Extinguishers the heat-shielding dry chemical is a non-conducting, non-abrasive, non-toxic, finely pulverized powder compound . . . blankets fire instantly. Sizes range all the way from 4 to 150 pounds capacity . . . all fully approved by the Underwriters' Laboratories, Inc., Factory Mutual Laboratories and Government Bureaus.

Act now for complete free information on these top quality, sure-acting fire extinguishers. Remember fire doesn't wait . . . get the facts today!

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MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
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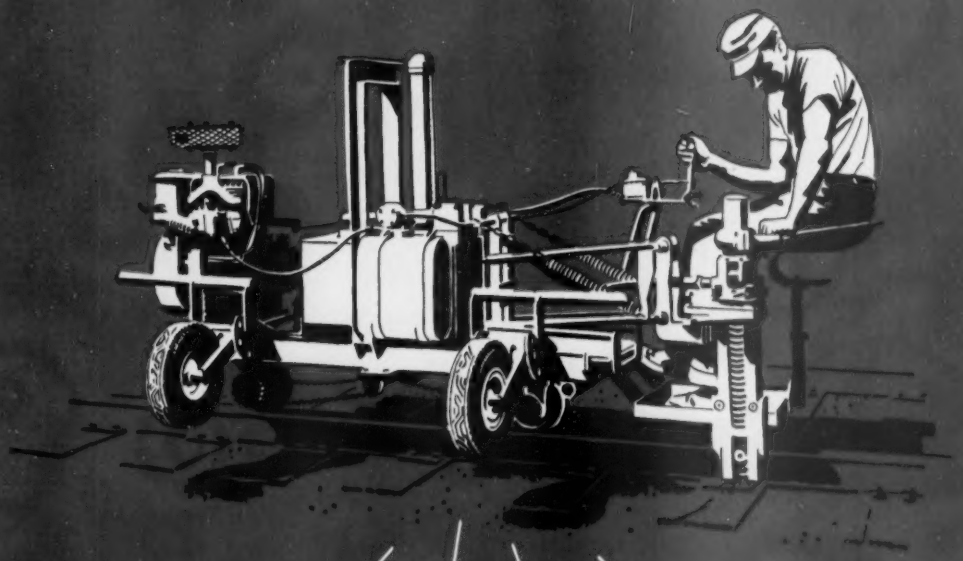
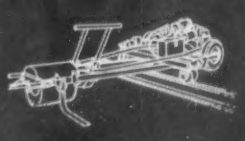
Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

Whatever your needs for rail renewal



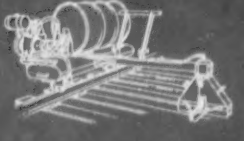
Fairmont has the answer!



W85 SERIES A TIE BRUSH cleans tie area under and adjacent to the tie plate. Hydraulically propelled, it is well suited to gang use ahead of adzers and for cleaning prior to application of plastic base for tie plates.

W89 SERIES A CRIB REDUCER digs out crib that might foul the teeth of adzer. Digging drive includes fluid coupling, multiple V belts and speed reducer. Adjustable counter balance and 2-way drive. One-man operation.

W79 SERIES A SPIKE SETTER CARRIAGE makes spike setting easy and economical. Large, convenient spike hopper; perfectly placed working seat; double-flanged rail wheels and two-rail, two-way operation.



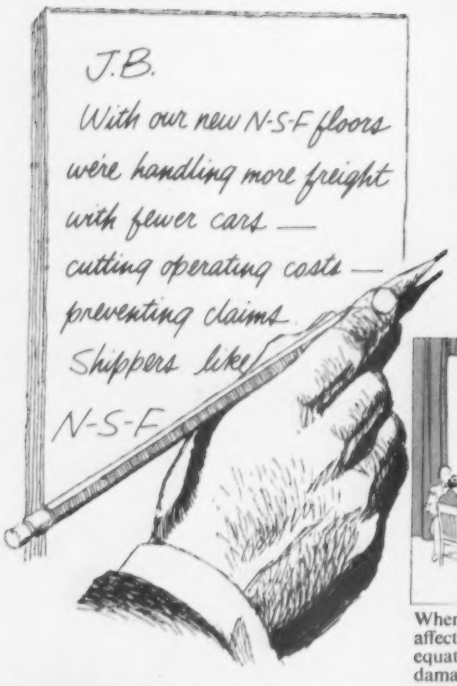
W71 SERIES A TIE SPRAYER applies protective coating to newly adzed surfaces quickly and thoroughly. One-man operation. Automatic spray. Average consumption only 25 gallons of preservative per mile of single rail.

Performance ON THE JOB COUNTS

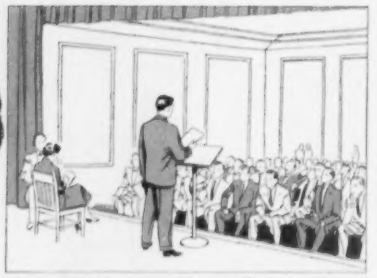
For every phase of railway maintenance, Fairmont designs and builds a wide variety of equipment that answers perfectly the needs of modern railroading. Consider, for a moment, the problem of rail renewal. The most recent Fairmont development in this field, the W85 Hydraulic Spike Puller, is shown above in action. It has been designed especially for rail gang use, and is self-propelled for both forward and reverse. Requiring only one man for operation, its pulling assembly, controls and operator's platform and seat can be positioned for pulling spikes on either side. Working in pairs, the W85 machines have a capacity of from 40 to 50 spikes per minute and can handle the needs of an average gang of 75 men. This unit is one of Fairmont's latest additions to a complete line of products created expressly for rail renewal. Each is the result of years of research in design and engineering—and of comprehensive testing under actual field conditions. A representative selection is shown and described above—and we invite your inquiry on these or any other products in which you are interested. You will find, we are certain, that Fairmont is your finest source for every maintenance requirement.

FAIRMONT RAILWAY MOTORS, INC., FAIRMONT, MINNESOTA

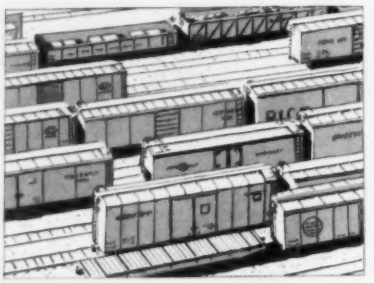
MANUFACTURERS OF INSPECTION, SECTION AND GANG CARS, HY-RAIL CARS, MOTOR CAR ENGINES, PUSH CARS AND TRAILERS, WHEELS, AXLES AND BEARINGS, BALLAST MAINTENANCE CARS, DERRICK CARS, OIL SPRAY CARS, GROUTING OUTFITS, TIE RENEWAL EQUIPMENT, RAIL RENEWAL EQUIPMENT, WEED CONTROL EQUIPMENT.



How railroads progress and reduce operating costs with Nailable Steel Flooring



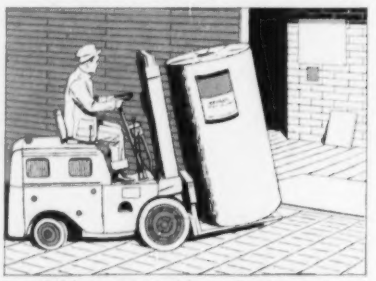
When traffic managers discuss matters affecting car supply, a recurring topic is inadequate flooring. Floor failures cause freight damage, limit use of mechanical equipment.



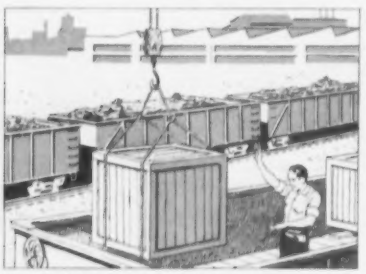
Seriousness of the problem, as Railroad Shippers' Advisory Boards point out, is reflected in the number of cars rejected by shippers as unsuitable for safe transportation of freight.

Railroads attempt to keep up floor care. But they're squeezed by rising labor costs, and loss of revenue during repairs. The positive solution: N-S-F—NAILABLE STEEL FLOORING.

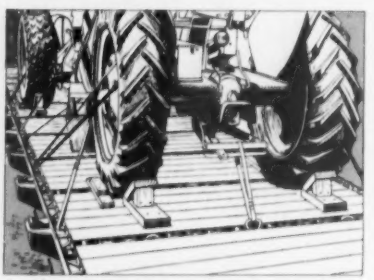
NAILABLE STEEL FLOORING provides a dependable, trouble-free surface that withstands repeated nailings and affords the best possible security for all kinds of freight.



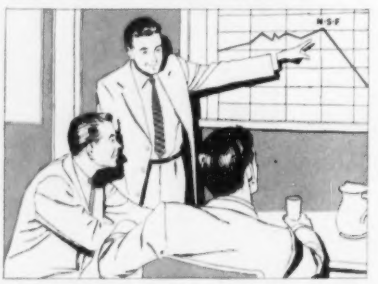
In addition, N-S-F withstands the strain of mechanical loading devices. And—like no other car floor—it actually adds strength at critical points of the car structure.



In gondolas N-S-F supplies the impact- and wear-resistance of steel, and adds nailability. It does away with the need for different type gondolas for rough and finished loads.



On flatcars equipped with NAILABLE STEEL FLOORING, loads can be blocked with nails—and can have the added security of straps or wires fastened to multi-position fixtures.



Car departments can show that N-S-F, already installed in over 16,000 cars, far more than repays its higher initial cost, successfully meets shippers' needs, attracts more freight.

NAILABLE STEEL FLOORING is made of low-alloy N-A-X HIGH-TENSILE steel—remarkably strong, corrosion-resistant—formed into channels, and welded together to form a unique nailing groove. Nail is clinched in a tight grip of steel, yet can be easily removed.

COMPLETE engineering and cost data available from Great Lakes Steel Corporation, Steel Floor Division, Ecorse, Detroit 29, Michigan. Sales representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco, Montreal and New York.

GREAT LAKES STEEL CORPORATION

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Current Publications

PAMPHLETS

WHAT TO EXPECT FROM WIREBOUNDS. Revised edition. Illustrations. Wirebound Box Manufacturers Association, 327 S. LaSalle st., Chicago 4. Free.

This brochure covers construction principles of wirebound shipping containers, the four basic styles of wirebound boxes, typical wirebound pallet boxes for materials handling needs, and how wirebound boxes and crates result in reduced tare weight, quicker packing, easier stacking, reduction of space in storage after being packed, and generally overall lower packing costs. The foreword points out: "The story of the wirebound principle, its construction features, its flexibility and its versatility are described in detail. . . . How the size, shape and weight of a product, its mode of transportation, warehousing and distribution factors are all considered in the container design is thoroughly explained."

•

HANDBOOK OF ASBESTOS TEXTILES. 84 pages, illustrations. Dr. Myril C. Shaw, Asbestos Textile Institute, School of Ceramics, Rutgers University, New Brunswick, N.J. $1.

This handbook is intended primarily as a source of information about asbestos textiles and characteristics which adapt them to a large and constantly expanding number of diversified uses. Because these textiles are made from asbestos fibers, the first pages of the handbook are devoted to the mineral asbestos. This is followed by sections describing mining, milling and grading of asbestos fibers for textile purposes and processing steps by which "opened" fibers are converted into finished textile products. The major section covers the products and their applications. Then follows a list of representative uses and information about styles, textures, weaves, sizes, grades, standard packages, etc. A total of 12 asbestos textile products, including roving, yarn, thread, rope, cord, tape, tubing and cloth are covered in this manner. The handbook also contains a section giving A.S.T.M. specifications and methods of test used for asbestos textiles, as well as a handy glossary of terms.

•

A CHRONOLOGY OF AMERICAN RAILROADS. 9 pages. Association of American Railroads, Transportation bldg., Washington 6, D.C. Free.

The AAR has brought up to January 1, 1953, this chronology of American railroad facts, which begins in 1807, with the fact that Silas Whitney operated a horse-drawn and gravity

(Continued on page 57)

wooden tramway on Beacon Hill, in Boston. Growth of railway mileage by states and by years from 1830 through 1951 is shown, and also the growth of the United States during the first century of the railway era. Another page explains what the American railroad system is and does.

•

AMERICAN TRUCKING TRENDS, 1953 Edition. 45 pages. American Trucking Associations, 1424 Sixteenth st., N.W., Washington 6, D.C. Free.

Contains statistical data on the "motor truck industry" for 1951 and several preceding years. Statistical series cover revenues and expenses, employees, wages, traffic, equipment, etc. Data are shown both in figures and bar charts.

•

THROUGH HISTORY WITH STANDARDS. 32 pages, illustrations. American Standards Association, 70 E. 45th st., New York 17. Single copies free, quantity discounts on request.

Explains, in simple language and with amusing cartoons, how some of our standards were arrived at. Included are how the railroads standardized track gages and measurements of stresses.

•

CHEMICAL SAFETY DATA SHEET SD-55, BUTADIENE. 16 pages. Manufacturing Chemists' Association, 246 Woodward bldg., 15th & H sts., N.W., Washington 5, D.C. 25 cents.

Gives properties and information for safe handling, storage and use of butadiene, a chemical widely used in manufacture of rubber products.

•

ENTERPRISE—IN STEEL. 32 pages, illustrations. Republic Steel Corporation, Republic bldg., Cleveland 1. Free.

A special report outlining Republic's growth; modernization program; reserves of ore, coal and limestone; markets; research; human relations program; and management.

•

PERIODICAL ARTICLES

THE CENTRAL ROLLS AGAIN, by Herrymon Maurer. Fortune, May 1954, p. 86, et seq. Time, Inc., 9 Rockefeller Plaza, New York 20. Single copies, $1.25.

Everyone is watching the raucous battle for control of the New York Central, but few spectators know much about the prize. Here is a sharp look at the railroad that President William White, in less than two years, has hoisted out of the ditch and put back on the rails. The leading editorial in the same issue of Fortune is entitled "The Sound and Fury of Robert R. Young."

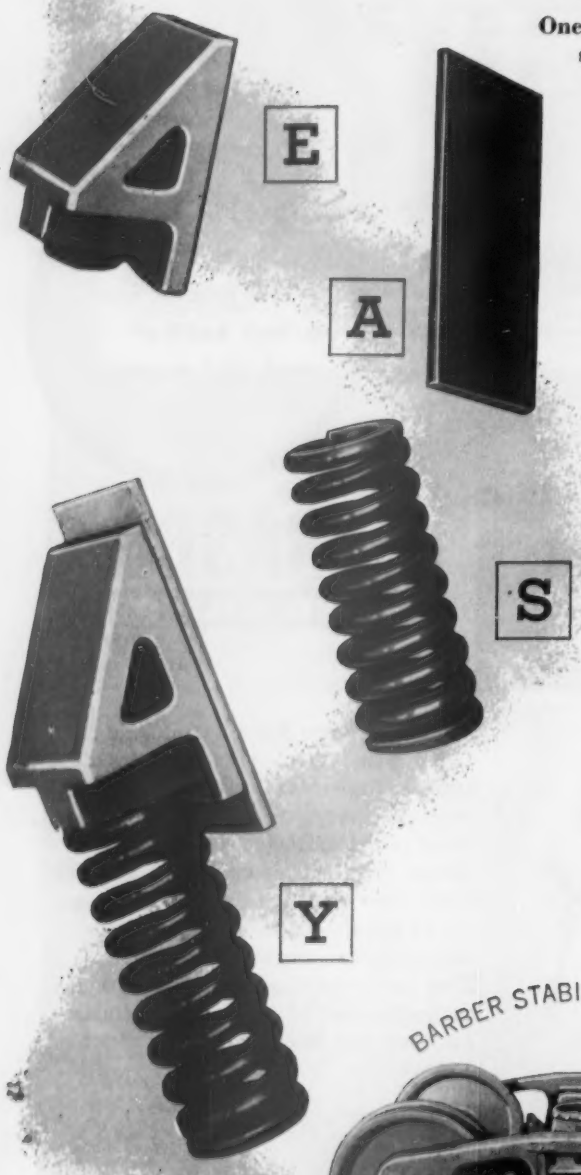
EASY does it!

ASSEMBLING—DISMANTLING—SERVICING

One of the features of Barber Stabilized Trucks that users seem to like best is the simplicity, speed and ease with which they are assembled, dismantled and serviced.

One reason for this time-and-trouble-saving is that Barber Stabilizer parts are freed when the bolster is raised off the springs. Another is that Barber, in pioneering these VERY EASY-RIDING TRUCKS, employed the smallest possible number of parts, each of which has exceptional strength and durability.

These facts, we believe explain why more than 350,000 Barber Stabilized Trucks have been specified up to this time.

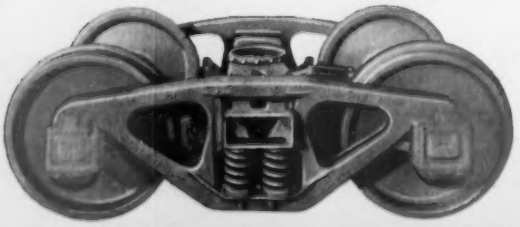


E — Special Heat-Treated Alloy-Iron friction casting having 35 inches of friction-bearing surface.

A — Spring-steel wear plate securely bolted or welded to the column.

S — Friction-casting-supporting side-spring having a minimum ¾" initial compression.

Y — Barber Side Springs carry part of the load, thus increasing bolster spring capacity and reducing net cost.

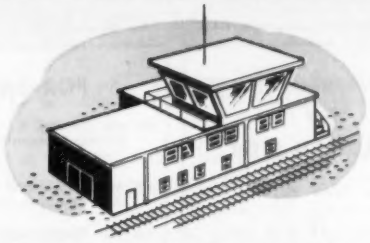


394R

STANDARD CAR TRUCK COMPANY
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

give Bridge Maintenance Problems a lift with

"Liquid Aluminum"



ONE COAT PROTECTION FOR BUILT-UP OR RUSTABLE METAL ROOFS

Liquid Aluminum with asphalt will add years to roof life. It will also keep buildings and cars cooler in summer to cut air conditioning costs, increase passenger comfort and employee efficiency and reduce perishable freight losses. The *Liquid Aluminum* label and special Warranty Seal are your assurance of top quality. Write for folder.

Liquid Aluminum protects vertical lift railway bridges like this, as well as all other type steel bridges and structures, against ruinous rust. It resists corrosion from smoke and fumes, too. Almost equally important, *Liquid Aluminum* reflects up to 85% of heat and light rays. This minimizes the possibility of buckling due to over-expansion and makes right-of-way equipment highly visible at night.

Paint bright metallic protection on your rolling stock, signaling and communication equipment and installations, tanks, towers, buildings and other railway structures and equipment, too! Keep your line in top-operating condition and cut maintenance costs with *Liquid Aluminum*.

Look for the *Liquid Aluminum* label on the aluminum paint you choose. It is made to approved minimum standards that have been adopted by the many paint manufacturers who make *Liquid Aluminum*. These standards assure you of the best combination of elasticity and durability for longest life on most painting applications. Ask your paint supplier or write for names of manufacturers to Reynolds Metals Company, 2500 South Third Street, Louisville 1, Kentucky.

This advertisement appears in the interest of the Paint Industry of America

CLASSIFIED ADVERTISEMENTS

Moving for the MoPac

TWO INTERNATIONAL TD-14A crawler tractors with matched scrapers restore embankment near Thrall, Texas, following replacement of old rails with new 115-pound rails.

INTERNATIONAL crawlers used by Missouri Pacific Railroad on widespread improvement program

Playing a big part in the Missouri Pacific's planned progress are INTERNATIONAL crawler tractors with matched dozers and scrapers.

Hundreds of off-track jobs are being completed daily with speed and economy. And when it comes to ease of operation, listen to what dozer operator C. J. Miller has to say:

"I like the way this TD-14A handles, whipping around a telephone pole or holding a steady line just inches away from the railroad tracks. In this work you have to be able to look where you're going and go where you look. You've really got it made with a TD-14A."

Seven powerful models of reliable INTERNATIONAL crawler tractors with matched equipment are ready to do the job faster and better for you. And now the high-speed INTERNATIONAL two-wheel, rubber-tired tractors with scrapers round out the complete earth-moving line that comes in the Big INTERNATIONAL Package.

Check with your International Industrial Distributor today. He'll gladly arrange a demonstration of any INTERNATIONAL equipment . . . anywhere, any time you specify.

INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILLINOIS

INTERNATIONAL

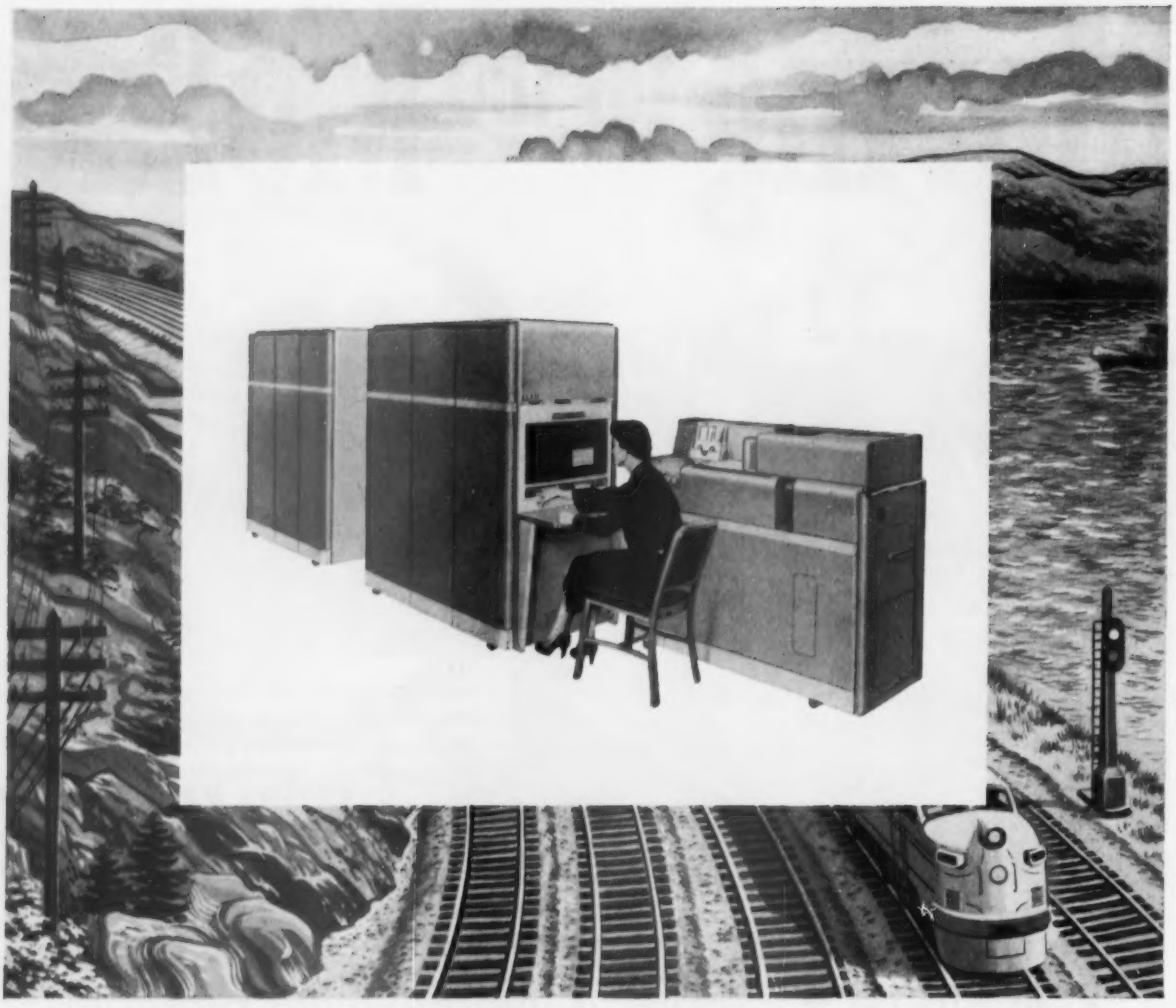
INTERNATIONAL HARVESTER

***Phased Equipment**—Machines designed and built to handle each major phase of earthmoving most efficiently and economically.

For every move in Earthmoving

ON TRACKS ...ON RUBBER

See INTERNATIONAL'S "Job-Phased" equipment



NEW IBM DEVELOPMENT FOR RAILROAD ACCOUNTING

IBM "650"

This revolutionary magnetic drum machine can drastically reduce the time presently involved in freight interline abstracting, employee timekeeping, payroll disbursements, and interline passenger accounting.

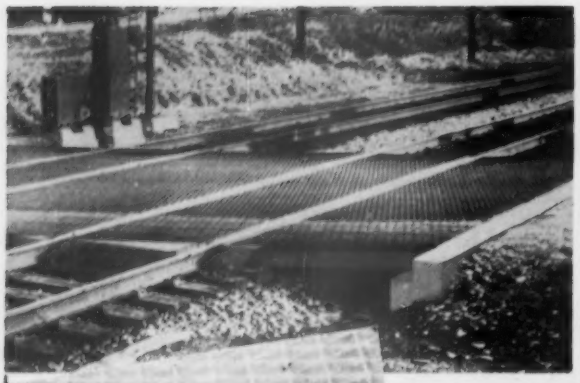
The new IBM "650" utilizes the efficient "stored program" technique. It has tremendous storage . . . 20,000 digits—including capacity for 2,000 individual operating instructions. It features normal decimal input and output. It is self-checking. It makes multiple distribution of data without cards being in distribution sequence.

Facts and figures needed for efficient control can be made available hours, frequently days, earlier than at present.

For a description of the function and advantages of the "650", write for our folder, "Type 650—Railroad Payroll Disbursements and Passenger Accounting."

IBM
TRADE MARK

INTERNATIONAL BUSINESS MACHINES
590 Madison Avenue, New York 22, N. Y.



Condon CROSSINGS SAVE YOU MONEY!

Original installation — Erie main line at Canisteo, N. Y. — has been in service six years. Shows no wear — has needed no replacements — still as good as when installed.

Install It . . . Forget It . . .

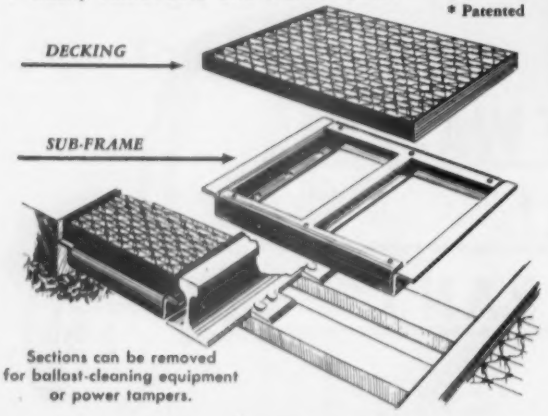
NO Replacements . . . NO Maintenance

CONDON STEEL GRATING RAILROAD CROSSING*

Constructed to H 20 Loading
All Steel Surface and Sub-frame
Drains Freely — Allows Ballast Complete Aeration — Prolongs Track Life

- Highly durable, non-skid steel surface
- Can be installed by 2 men — no heavy equipment required
- Sturdy and noiseless • Fits any rail section
- Drains freely — no snow or ice removal problems
- Curve installation at no extra cost
- Easily removable and transferable

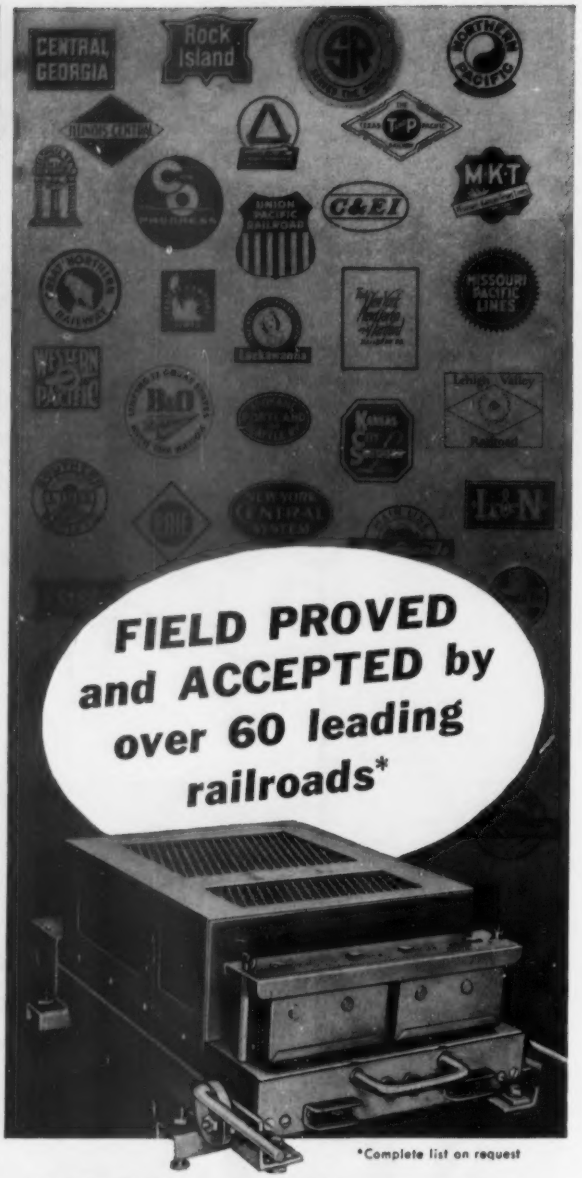
* Patented



Sections can be removed for ballast-cleaning equipment or power tampers.

MORRISON RAILWAY SUPPLY CORP.

General Offices — BUFFALO, N. Y.
Chicago, Illinois • Birmingham, Alabama



*Complete list on request

C-D Vibrator Converter

Saves 60% on cost of initial installation. Saves 50% each year on maintenance. Services itself en route. Now equipped with shock resistant magnetic circuit breakers.

Write for catalog to:
Cornell-Dubilier Electric Corporation, Dept. RA-54
Indianapolis Division, 2900 Columbia Avenue,
Indianapolis, Ind. Affiliated Member A.A.R.

CONSISTENTLY DEPENDABLE
CORNELL-DUBILIER

VIBRATOR CONVERTERS WITH RAILROAD DEPENDABILITY
by the makers of world-famous C-D capacitors

PLANTS IN SO. PLAINFIELD, N. J.; NEW BEDFORD, WORCESTER & CAMBRIDGE, MASS.; PROVIDENCE & HOPE VALLEY, R. I.; INDIANAPOLIS, IND.; FUQUAY SPRINGS & SANFORD, N. C.; SUBSIDIARY: RADIART CORP., CLEVELAND, O.

THE ENGINEER'S REPORT

DATA

PRODUCT Calol Filter Coat

UNITS Air filters on diesel locomotive engines and car bodies

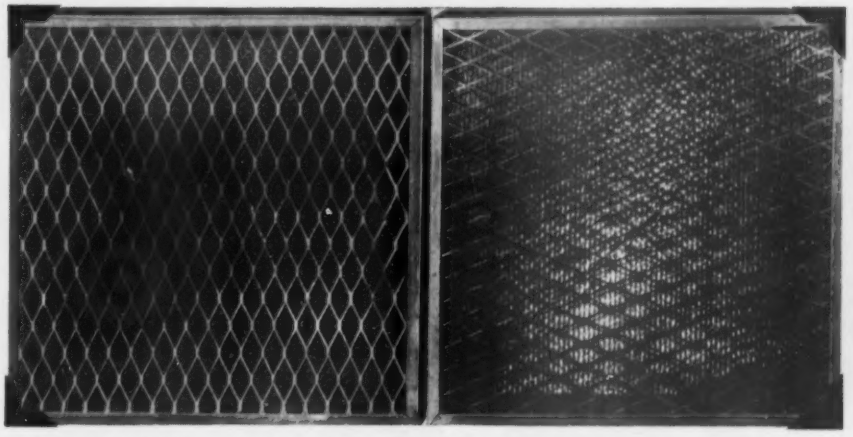
CONDITIONS Heavy dust due to rail-sanding on grades

LOCATION Roseville, Calif.-Sparks, Nev.

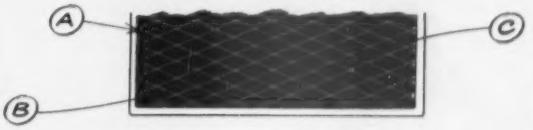
FIRM Southern Pacific Co.

New adhesive sets air filter efficiency standards!

CALOL FILTER COAT, a new type of adhesive tested on impingement-type air filters of 40 Southern Pacific diesel locomotives, allowed extension of normal filter servicing periods at least two times without appreciable loss of dust-catching efficiency. The car-body filter (immediate right) and engine air-intake filter, shown here, were photographed after 6400 miles of continuous use. Note that Calol Filter Coat is still evenly distributed, surfaces are still "wet" for maximum dust-catching efficiency and screens are still open enough to admit light through them. All Calol Filter Coat remained in place so that the use of drip pans was unnecessary.



How Calol Filter Coat Ups Efficiency of Impingement-type Air Filters



A. Will not drip off or flow from screens—full amount applied remains over the entire service period with sustained high-filtering efficiency at all ambient temperatures. Easily applied by conventional methods.

B. Has high wicking ability—quickly soaks through dirt particles in all air velocities and extreme dust concentrations.

C. No loss from contact with rain or snow, filters are easily cleaned with usual hot-water-detergent solutions.

FREE CATALOG: "How to Save Money on Equipment Operation," a new booklet full of valuable information, will be sent you on request to Standard Oil Company of California, 225 Bush St., San Francisco, Calif.

CALOL

TRADEMARK "CALOL" REG. U.S. PAT. OFF.

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

STANDARD OIL COMPANY OF CALIFORNIA, San Francisco 20 • STANDARD OIL COMPANY OF TEXAS, El Paso
THE CALIFORNIA OIL COMPANY, Barber, New Jersey • THE CALIFORNIA COMPANY, Denver 1, Colorado


FEDERAL
STORES
9345
9345
PENNSYLVANIA

Revenue trains begin and end at sidings where shippers judge railroad performance

Most big freight trains begin and end at industry sidings where shippers evaluate railroad service firsthand.

Prompt, economical service is your best means of meeting competition at the customer's shipping point . . . your Battleground for Business. Small diesel-electric locomotives offer an excellent opportunity to win tonnage for the rails and give shippers the kind of service they want.

Investigate your operation now to see if a pool of these "Train Makers" can spread your investment dollar, give shippers better service, and make more trains for the mainline.

For additional information, contact your nearest G-E Apparatus Sales office, or write to Section 121-62 for your free copy of "Train Makers" (GED-2060), an interesting booklet describing the important role of small diesel-electric locomotives in modern railroading. General Electric Company, Schenectady 5, New York.

You can put your confidence in—

GENERAL ELECTRIC

A.A.R. APPROVED
FOR UNLIMITED
USE IN INTERCHANGE

...when PLYPAK provides

HOT BOX

prevention

Protect journals with PLYPAK and most lubrication failures can be avoided. PLYPAK holds waste firmly in place under even the most adverse operating conditions. Pumping action of the PAK, squeezing and releasing the waste while the car is in motion, prevents glazing of the waste against the face of the journal. This action also tends to loosen accumulations of dirt in the waste allowing it to settle beneath the PAK while the waste is kept saturated with clean oil drawn up through slots in the bottom of the PAK. Result: A marked reduction in the incidence of hot-boxes on cars equipped with PLYPAK.

Your inquiry invited.

PLYPAK WASTE RETAINER

WAUGH EQUIPMENT COMPANY

420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

CHICAGO — ST. LOUIS — CANADIAN WAUGH EQUIPMENT COMPANY, MONTREAL

Putting Secondhand Rail to Work...

Handling rail from cars to ties in foreground in a program for 112 miles of yard track by the Pennsylvania Railroad at Conway, Pa.

You don't need *new* steel to produce cost-cutting continuous rail. In 1952, 30 per cent of the welds made with RIBBONRAIL service were in secondhand rails.

HERE'S WHY...

Used rail lasts longer when it becomes continuous rail —no ends to batter, no joints to wear—practically eliminates maintenance.

Cropping battered ends eliminates need for re-conditioning used rail and bars.

Cropping battered ends prepares the rail for welding and cropped rail ends bring high scrap prices.

*

These are strong points in favor of a RIBBONRAIL service program for used rail on your railroad.

Have you received your copy of the latest A.R.E.A. committee report on continuous rail? If you fill out the coupon, we'll send you a copy.

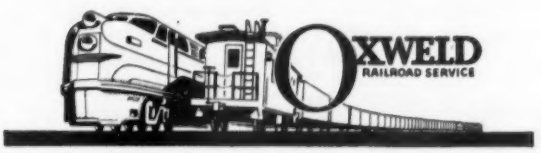
OXWELD RAILROAD SERVICE COMPANY
Room 1320
230 N. Michigan Avenue
Chicago 1, Illinois

Please send me, free of charge, the latest A.R.E.A. report on Continuous Rail.

Name _____

Street _____

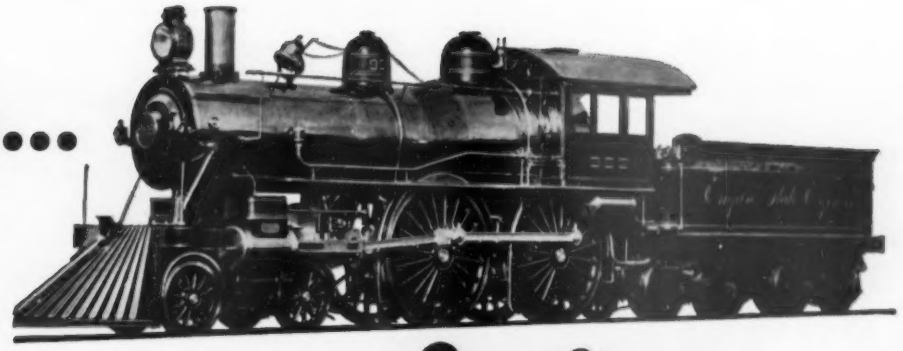
City _____ Zone ____ State _____



OXWELD RAILROAD SERVICE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
Carbide and Carbon Building Chicago and New York
In Canada: Canadian Railroad Service Company, Toronto
Division of Union Carbide Canada Limited
"Ribbonrail" is a Service Mark of UCC

ADVERTISERS IN THIS ISSUE

Then...



and now...

serviced with Esso Railroad Products

The record of fine old "999," shown above, strained the credulity of railroad men in 1893. Charlie Hogan, her engineer, reported an amazing 112.5 MPH on a measured mile stretch between Syracuse and Buffalo—a combined triumph of design of the unit itself and the skill and nerve of her engineer. Esso Railroad Products then as now played a major part in outstanding performance.

Constant testing on the road along with research and development of new railroad products have kept Esso Railroad Products a leader in the fast pace of modern railroading.

Like *All* Esso Railroad Products These Assure You Dependable Performance

Diesel Fuels
Esso Andok Lubricants—versatile greases
Aracar—journal box oils
Arapen—brake cylinder lubricant
Esso XP Compound—hypoid gear lubricant
Diol RD—Diesel lube oil
Coblax—traction motor gear lube
Varsol—Stoddard Solvent
Solvesso—Aromatic solvent
Esso Weed Killer
Esso Hot Box Compound
Arox—pneumatic tool lube
Cylesso—valve oil
Esso Journal box compound
Asphalt
Cutting Oils
Rail Joint Compounds
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Signal Department Products

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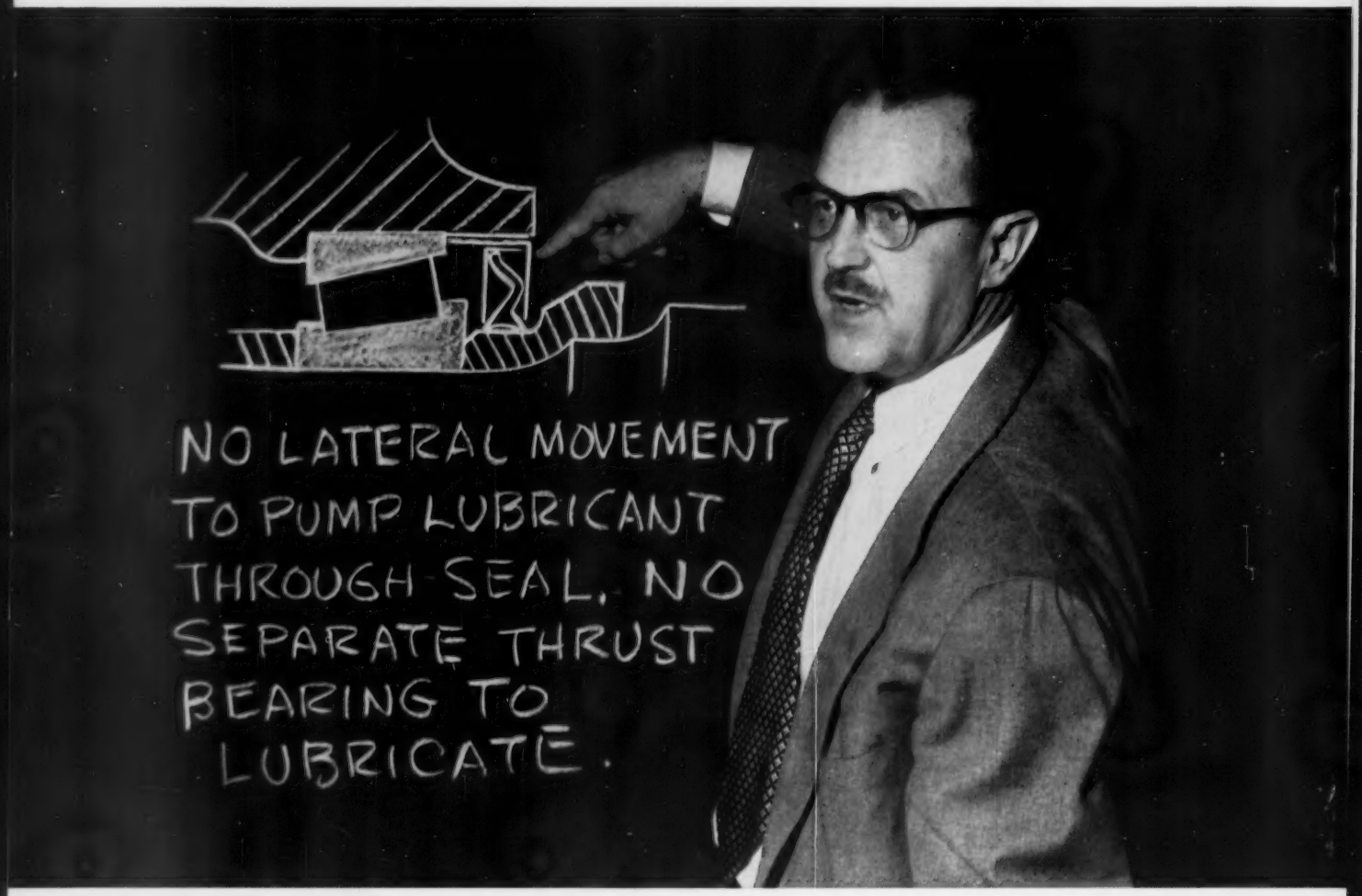
RAILROAD PRODUCTS

SOLD IN: Maine, N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Md., D. C., Va., W. Va., N. C., S. C., Tenn., Ark., La.

ESSO STANDARD OIL COMPANY — Boston, Mass. — New York, N. Y. — Elizabeth, N. J. — Philadelphia, Pa.—Baltimore, Md.—Richmond, Va. — Charleston, W. Va. — Charlotte, N. C. — Columbia, S. C. — Memphis, Tenn. — New Orleans, La.

This month Dr. Oscar Horger demonstrates that absence of lateral movement is one reason why:

The taper makes TIMKEN® the only journal bearing that delivers what you expect when you buy a roller bearing



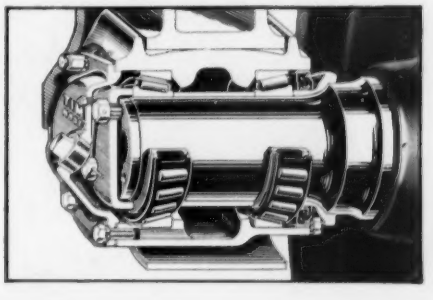
RAILROADS invest in roller bearings to end the hot box problem and cut operating and maintenance costs to a minimum. Other advantages are less important. Timken® is the *only* journal bearing you can count on to do both. For these two big reasons:

1) No lateral movement within the bearing. Incessant lateral movement of straight roller bearings scuffs rollers and races, shortens bearing life. It also pumps lubricant through the seal and out of the journal box, draws in dirt and water. And the auxiliary devices needed to take the thrust loads of lateral movement aren't completely effective, are hard to lubricate with grease.

The taper in Timken bearings prevents lateral movement, enables them to take both thrust and radial loads. Always rolling the load, Timken bearings eliminate scoring, scuffing and pumping. They end the hot box problem. Less lubricant and maintenance are needed. Bearing life is increased.

2) Positive roller alignment. The taper holds roller ends snug against the rib, where wide area contact keeps rollers properly aligned. Rollers can't skew to upset full line contact or shorten bearing life.

When you switch to roller bearings to end hot boxes and cut costs, remember: Timken is the only journal bearing you can fully count on to end the hot box problem and cut operating and maintenance costs to a minimum—it's the taper! The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".



THE TAPER MAKES TIMKEN THE BEARING YOU TRUST

NOT JUST A BALL ○ NOT JUST A ROLLER ⬭ THE TIMKEN TAPERED ROLLER ⬭ BEARING TAKES RADIAL ⓘ AND THRUST →ⓘ← LOADS OR ANY COMBINATION →✳←